R E P O R T R E S U M E S

ED 017 690 08 VT 004 455

TEST BOOKLET FOR THE VOCATIONAL EDUCATION TEST BATTERY.

GEORGE WASHINGTON UNIV., WASHINGTON, D.C.
REPORT NUMBER BR-5-0061 PUB DATE 65
CONTRACT OEC-5-85-023
EDRS PRICE MF-$0.25 HC-$1.64 39P.

DESCRIPTORS- *VOCATIONAL EDUCATION, *VOCATIONAL APTITUDE, *STANDARDIZED TESTS, *APTITUDE TESTS, VOCATIONAL EDUCATION TEST BATTERY,

THE VOCATIONAL EDUCATION TEST BATTERY CONSISTS OF TESTS TAKEN FROM THE PROJECT TALENT TEST BATTERY. TEST TITLES ARE (1) ABSTRACT REASONING, (2) MECHANICAL REASONING, (3) ARITHMETIC REASONING, (4) VISUALIZATION IN TWO DIMENSIONS, (5) VISUALIZATION IN THREE DIMENSIONS, (6) READING COMPREHENSION, (7) INFORMATION TESTS, AND (8) INTEREST INVENTORY. NORMS DEVELOPED BY PROJECT TALENT WERE BASED ON A NATIONAL SAMPLE OF STUDENTS AND ARE REPORTED FOR 15-YEAR-OLD BOYS AND GIRLS BOTH SEPARATELY AND COMBINED IN THE ADMINISTRATOR'S MANUAL (VT 004 456). OTHER RELATED DOCUMENTS ARE VT 004 454 THROUGH VT 004 471. (EM)

ED017690

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

TEST BOOKLET

FOR THE VOCATIONAL EDUCATION TEST BATTERY

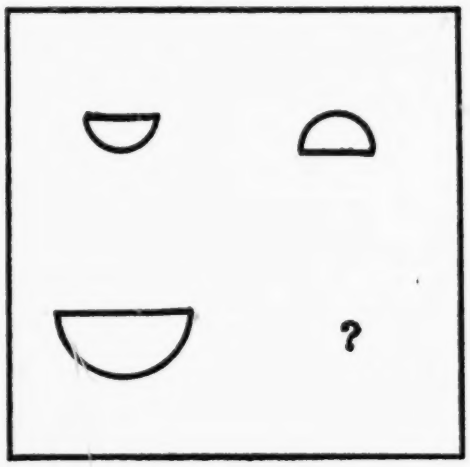
THE GEORGE WASHINGTON UNIVERSITY
SCHOOL OF EDUCATION
EDUCATION RESEARCH PROJECT
WASHINGTON, D.C. 20006
1965

VT004455

ABSTRACT REASONING

Directions: Each item in this test consists of a set of figures arranged in a pattern, formed according to certain rules. Look at the following pattern in sample item 1.

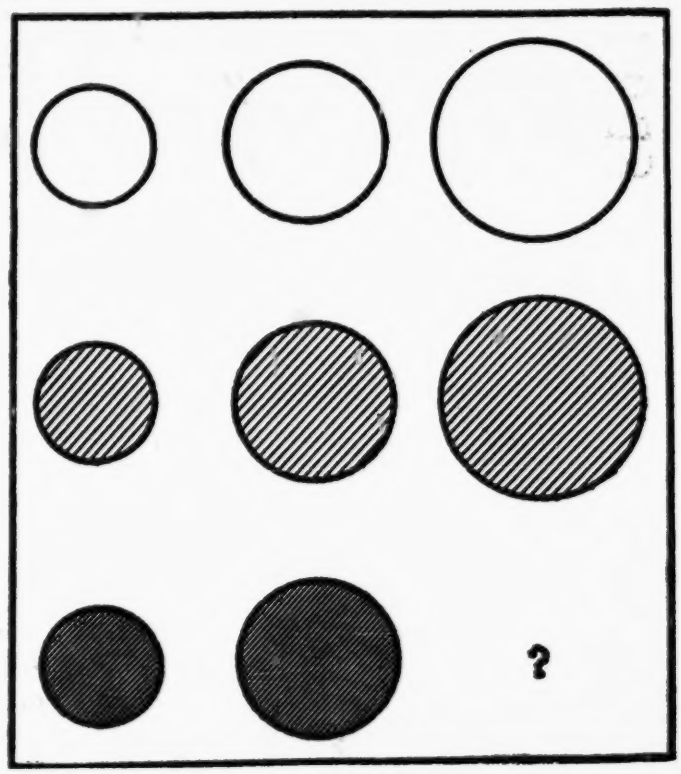
S1.

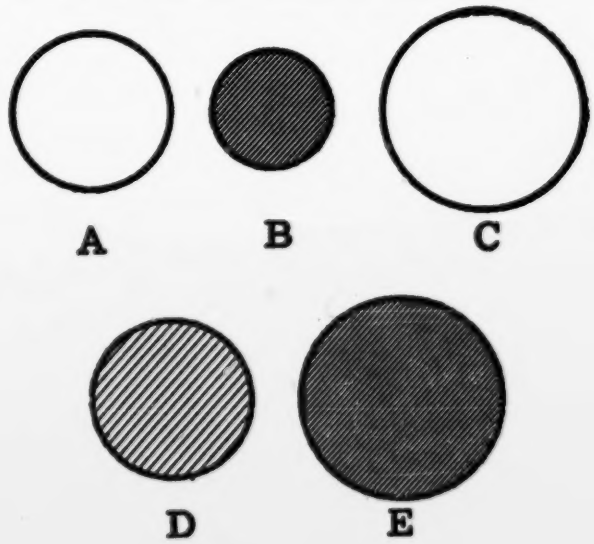


The question mark in the lower right corner of the box shows where a figure is missing in the pattern. You are to decide which of the five figures (**A, B, C, D,** or **E**) under the pattern belongs where the question mark is. In the case of the sample item above, the figure at the left in the bottom row is larger than the one above it but otherwise the same. In the top row the figure at the right is the same as the one to the left of it except that it has been turned upside down. Following these rules, the missing figure should be larger than the one above it, and exactly the same size as the one to the left of it, but upside down. Therefore **E** is the answer to this problem.

In each problem you are to decide what figure belongs where the question mark is in the pattern. To do this you have to figure out what the rule is according to which the drawings change, going from row to row, and what the rule is for the changes going from column to column. The items have different kinds of patterns and different rules by which the drawings change. Look at the next problem.

S2.





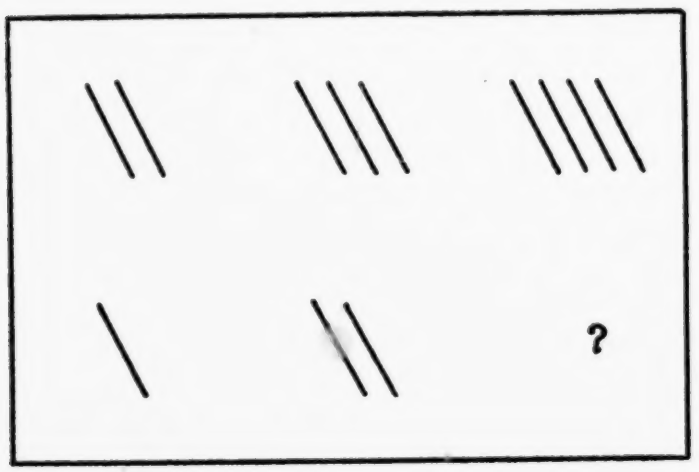
Going from left to right, the circles get larger, and going from top to bottom they get darker. Therefore the answer has to be a circle which is the largest of the three sizes, and the darkest. Choices **C** and **E** are both the right size, but **E** is the only large circle with the correct shading. Thus **E** is the only drawing that fits in the pattern formed by the other circles. **E** is the answer, and therefore answer space **E** has been marked on the answer sheet for this item.

Go on to the next page.

These tests are taken from the Project Talent Test Battery developed by the Project Talent staff of the University of Pittsburgh. For further explanation of these tests and the norms used by Project Talent, see the Test Administrator's Manual used to administer these tests.

Now look at another problem, which is quite different from either of the above ones.

S3.

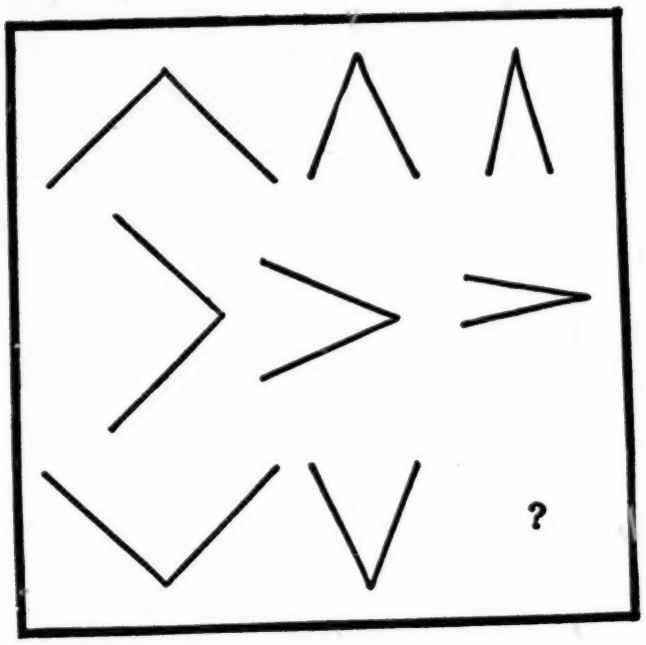


What is the missing figure here? If you study the pattern you will see that going from left to right there is one more line in each figure than in the one to the left of it. Going from top to bottom, the number of lines in any figure is one less than in the figure just above it. Therefore the missing figure should have three lines. The answer is choice **C** (the three lines, slanting in the proper direction).

When you are given the signal turn the page and start working the problems. For each problem decide what rules the pattern follows and find the answer that fits these rules and therefore "fits in" with the rest of the pattern. Many of the patterns are based on rules that are different from the ones in the sample items. Do not spend too much time on any one problem..

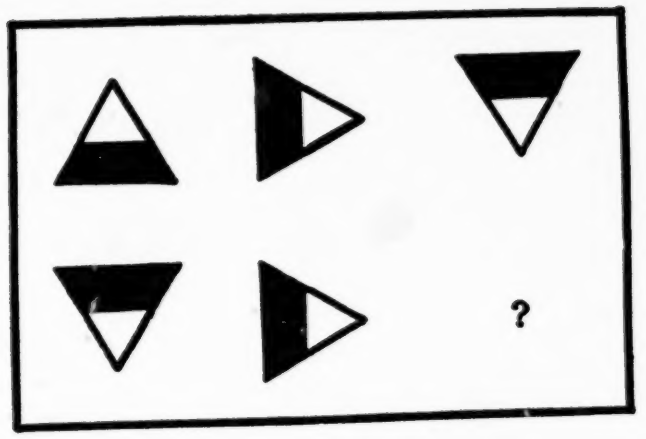
Stop here! Wait for further directions.
Do not turn the page.

1



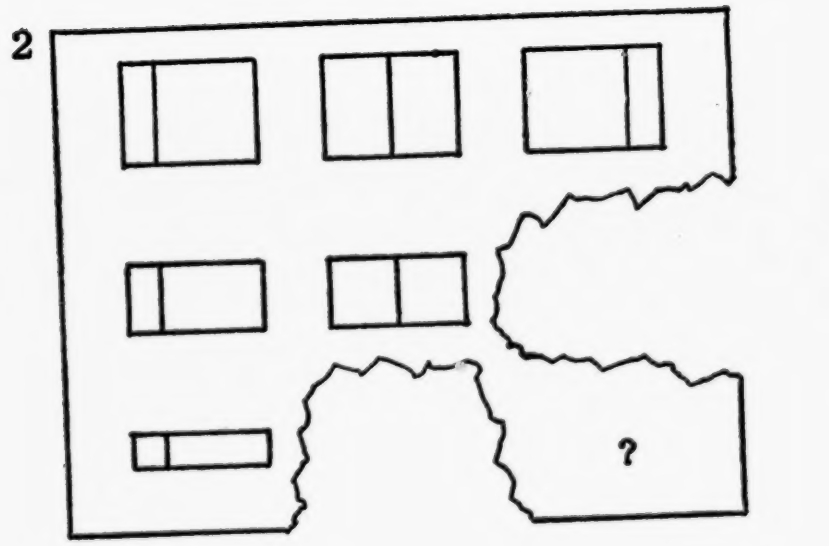
A B C D E

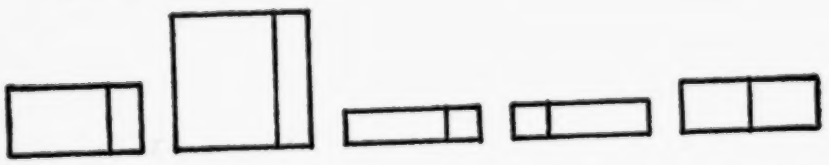
3



A B C D E

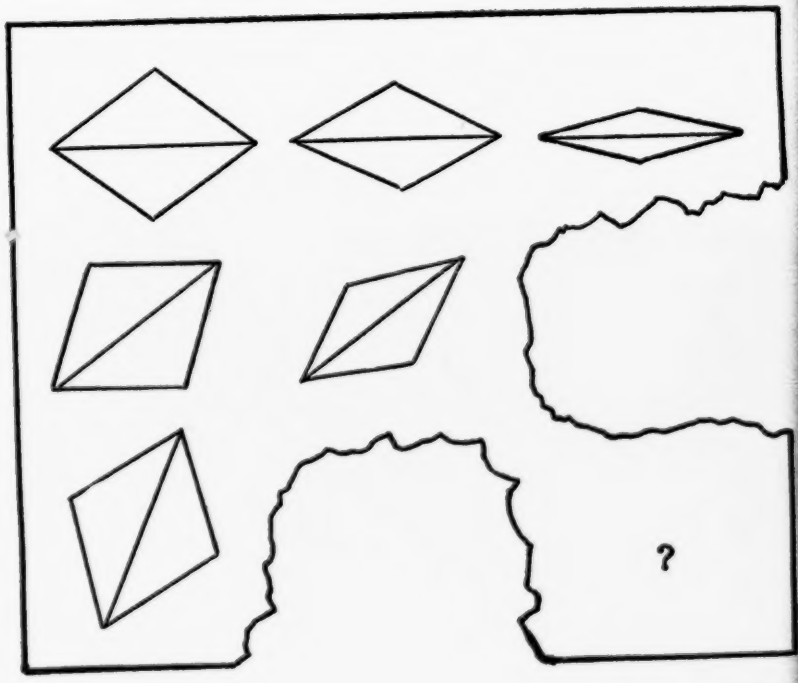
2

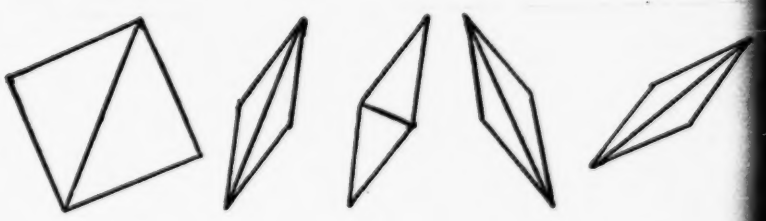




A B C D E

4

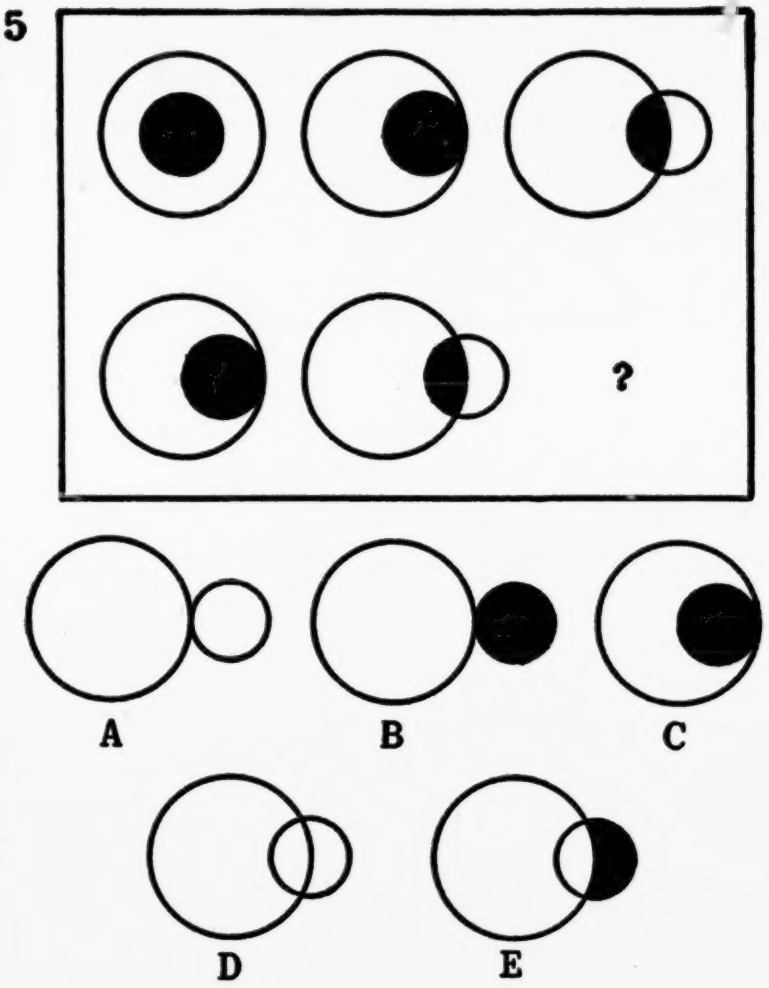




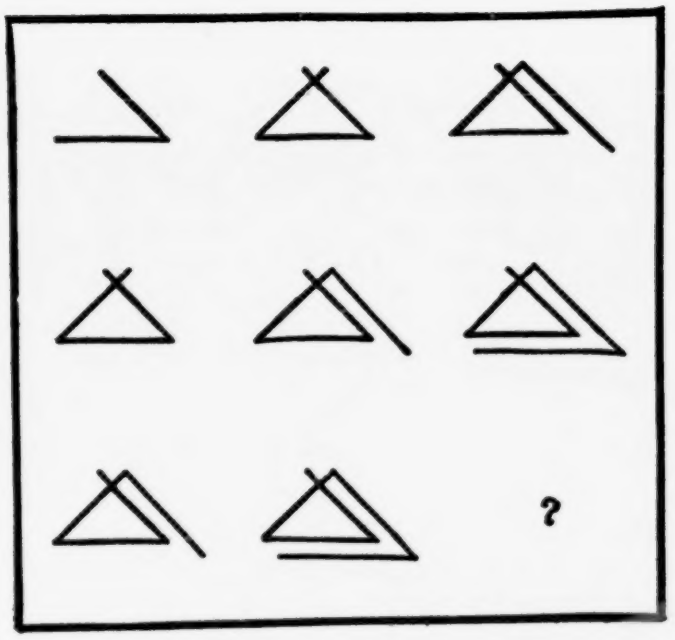
A B C D E

Go on to the next page.

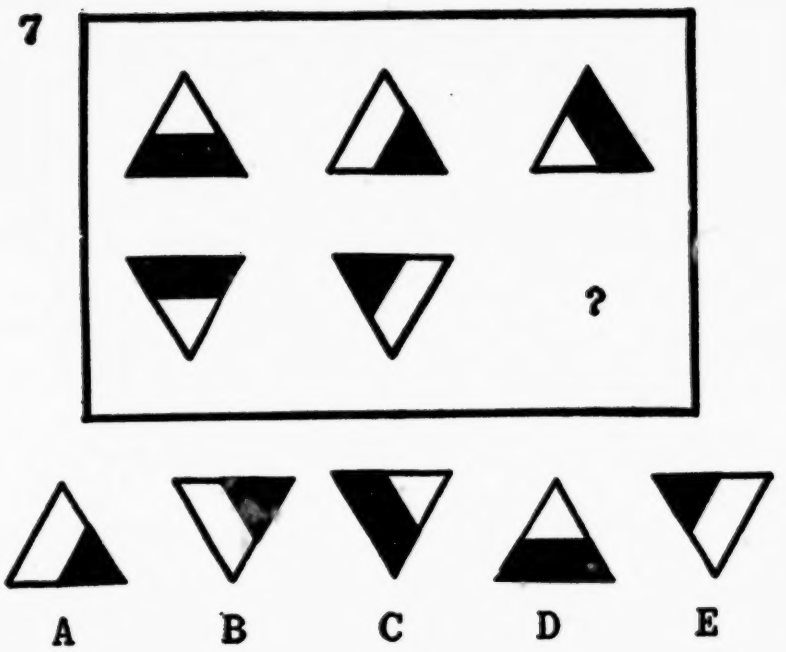
5



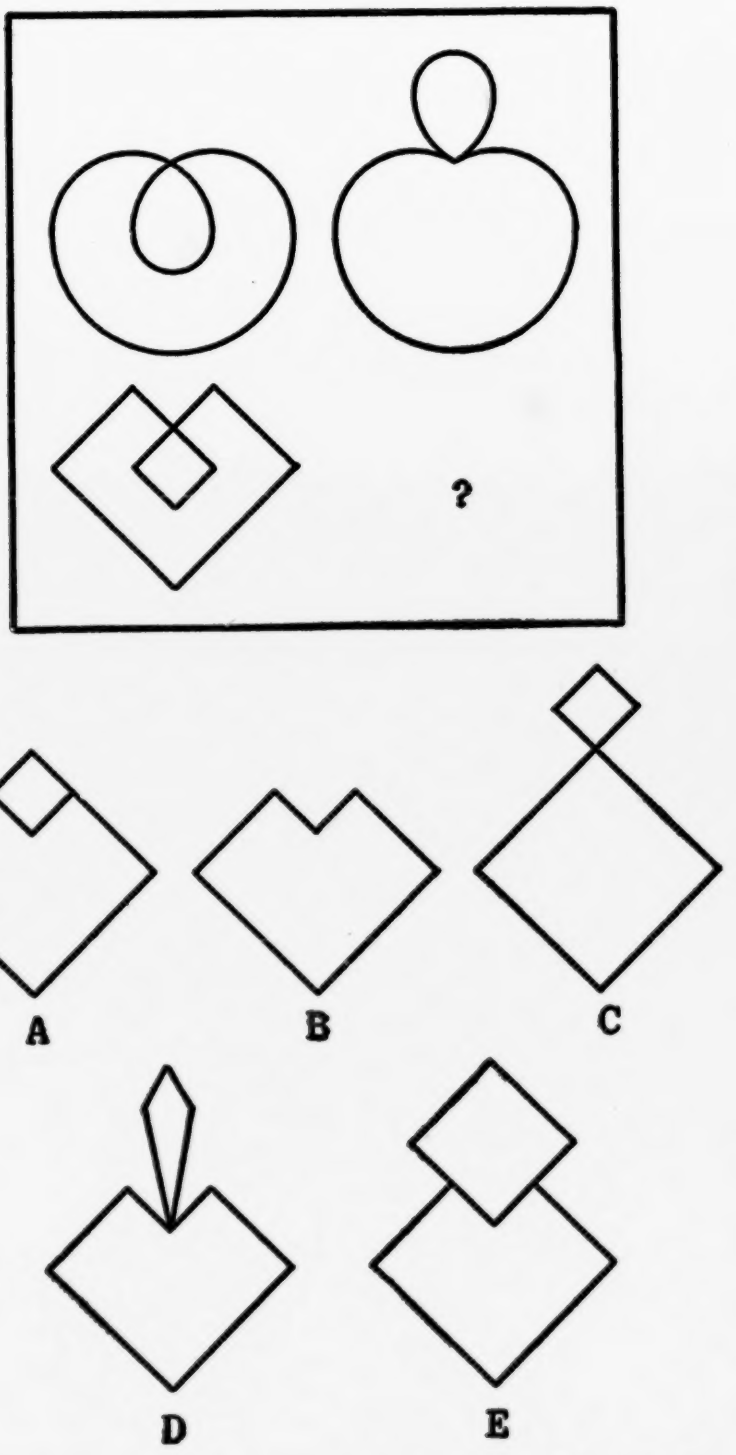
6



7

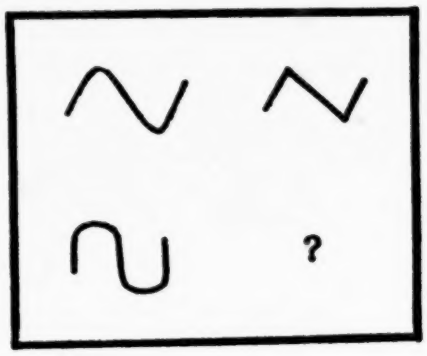


8



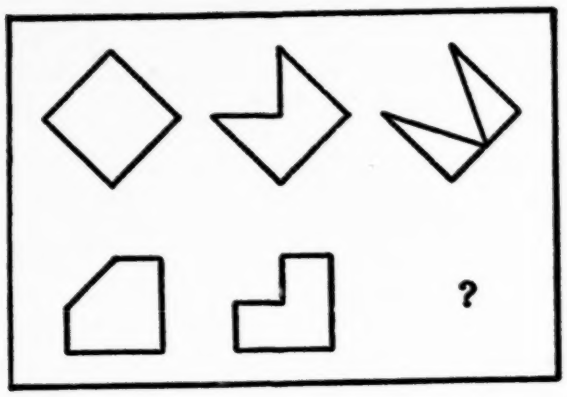
Go on to the next page.

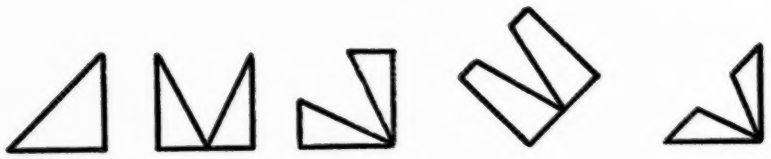
9



A B C D E

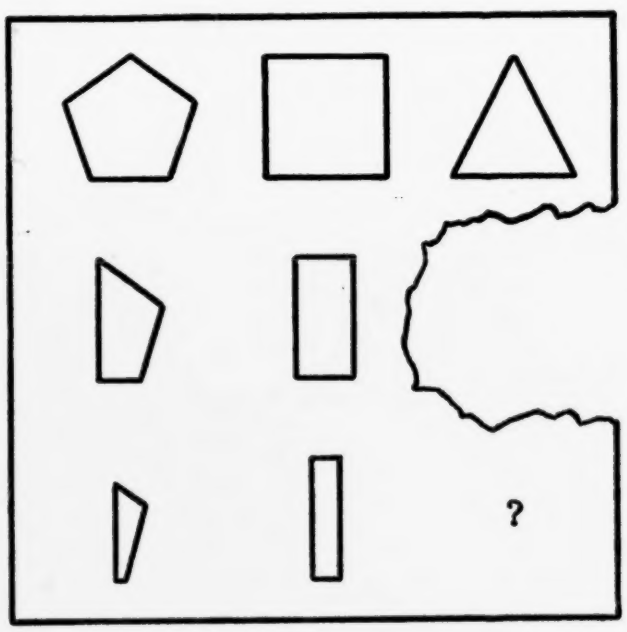
11

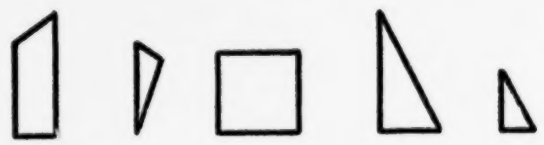




A B C D E

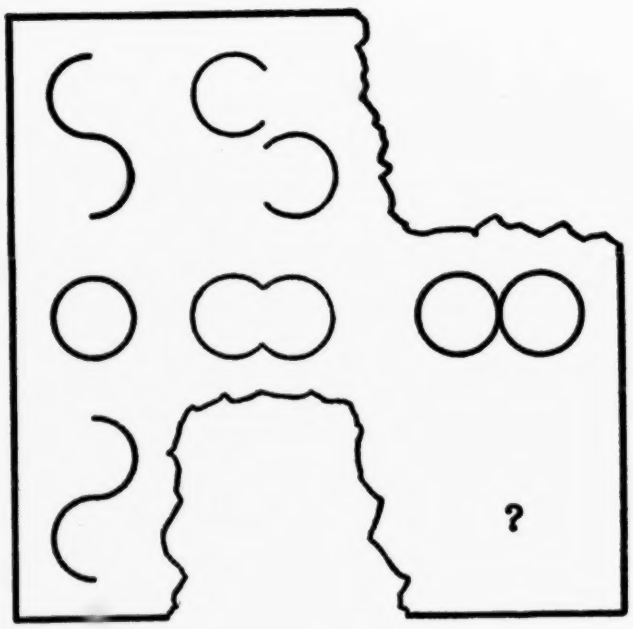
10





A B C D E

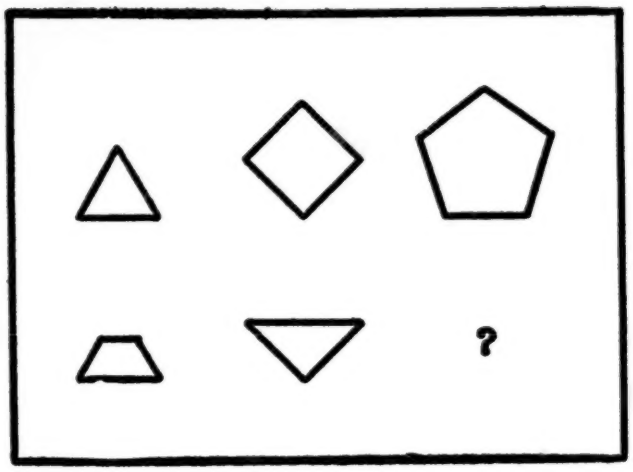
12

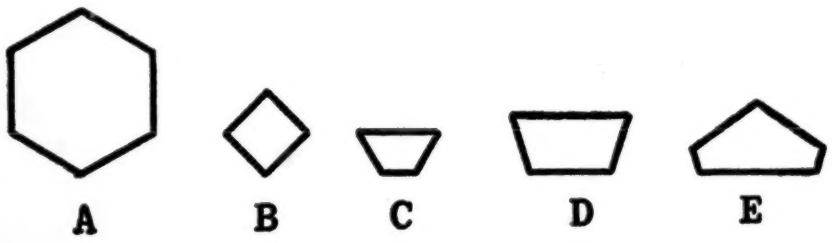


A B C D E

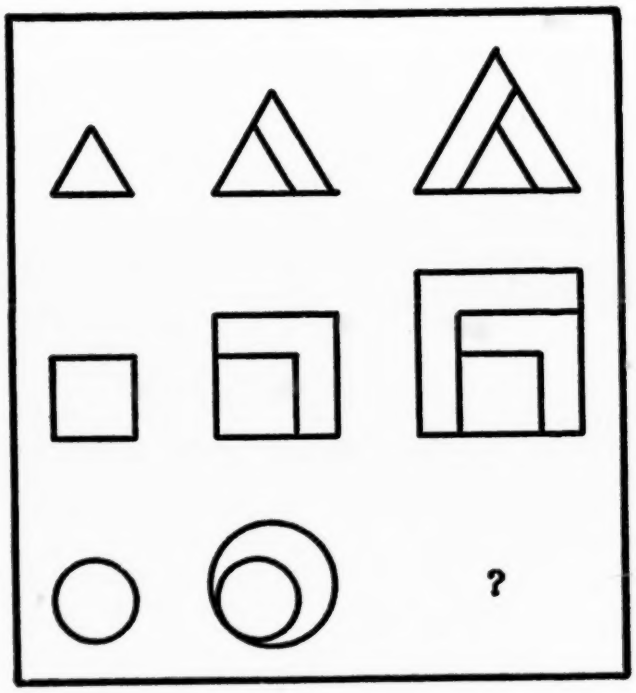
Go on to the next page.

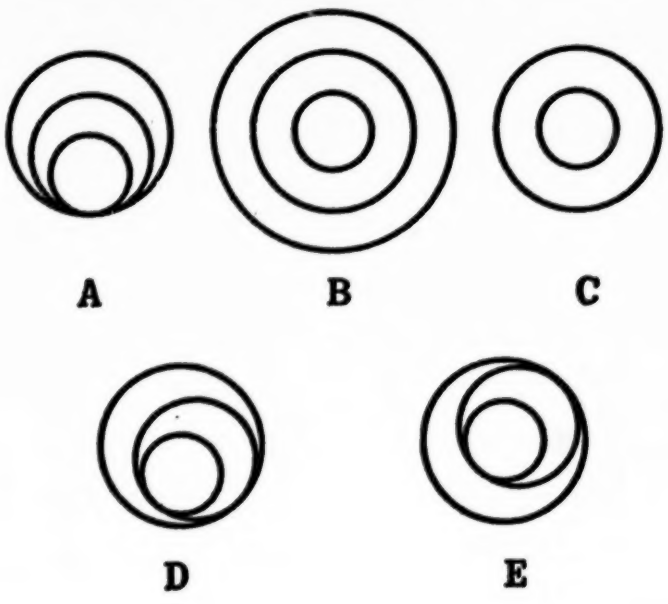
13



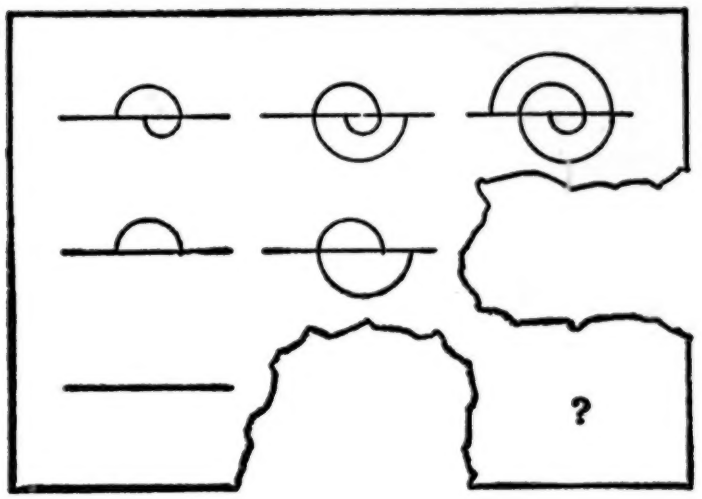


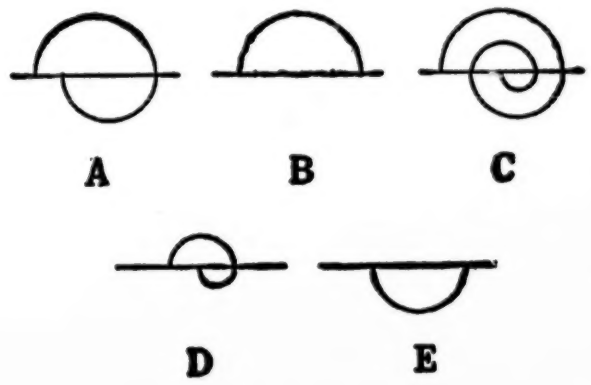
14





15



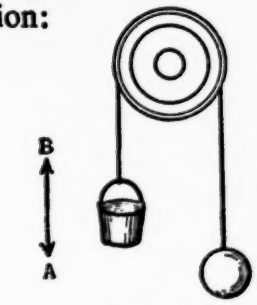


Stop here. Go back and check your work on this test (pages 2-7).

MECHANICAL REASONING

Directions: This is a test of your ability to understand mechanical ideas. You will have some diagrams or pictures with questions about them.

Here is a sample question:



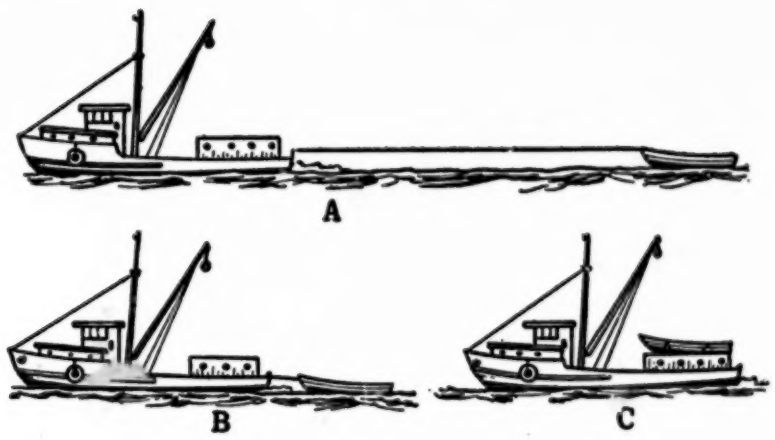
S1. Which way will the bucket move when the ball goes up?

A. In direction A (down)
B. In direction B (up)
C. There is no way of telling

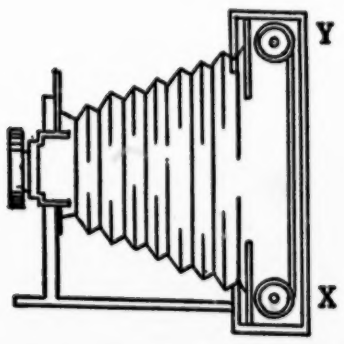
The answer is **A** because if the ball moves up, the bucket will move down. Since choice **A** is "Down" answer space **A** has been marked on the answer sheet for this sample item.

For each problem, read the question, study the picture above it, and mark the letter of the answer on your answer sheet.

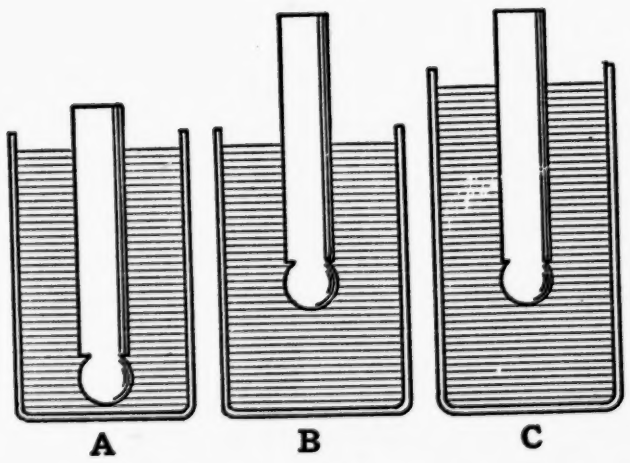
Stop here! Wait for further directions.
Do not turn the page.



1. Which way can the large boat go fastest?
   - A. A
   - B. B
   - C. C
   - D. It can go as fast one way as another.

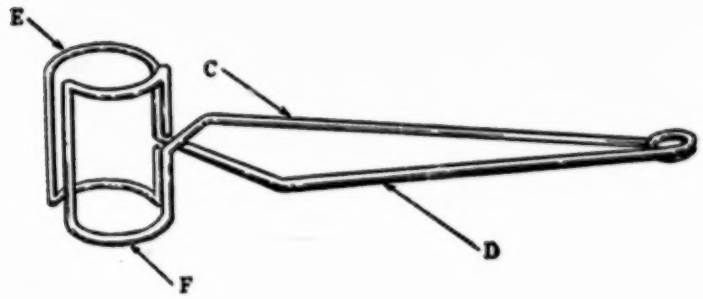


2. The picture shows a cross-section of a camera. If the unused film is on spool X, in which direction must spool Y be turned after taking the first picture?
   - A. Counterclockwise (↶)
   - B. Clockwise (↷)
   - C. In a direction opposite to that of spool X
   - D. There is no way to tell.



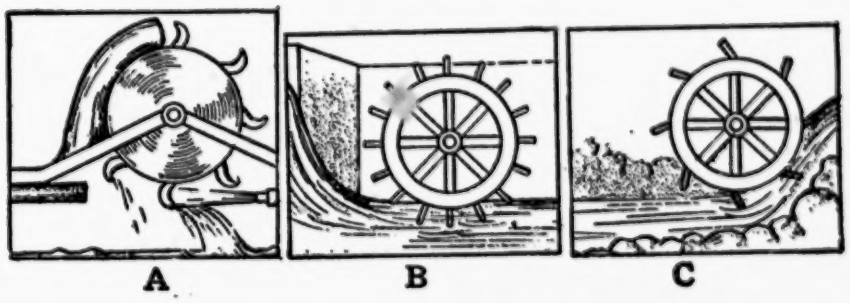
3. A stick with a lead weight on one end is floated in containers of water, alcohol, and motor oil. Which container holds the heaviest liquid?
   - A. A
   - B. B
   - C. C
   - D. There is no way of telling.

Items 4 and 5 depend on the following diagram:



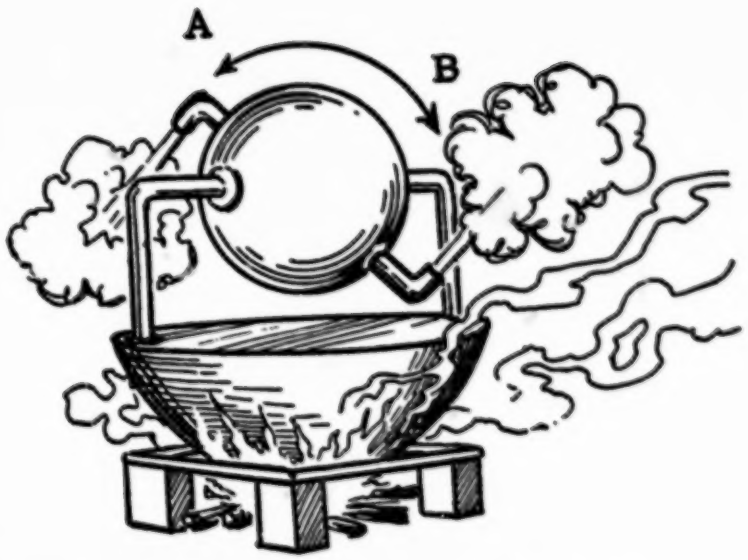
4. When the handles, C and D, are pressed together, the jaws of the forceps, E and F,
   - A. are locked in their present position.
   - B. move closer together.
   - C. move farther apart.

5. The jaws of the forceps, E and F, are closed by
   - A. spring action.
   - B. gravity.
   - C. hand pressure on C and D.



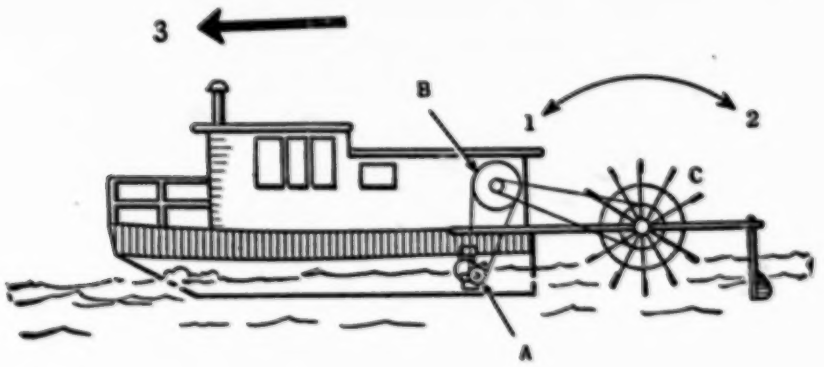
6. Which of these wheels turns counterclockwise (↶)?
   - A. A only
   - B. B only
   - C. C only
   - D. Both B and C
   - E. None of them

Go on to the next page.



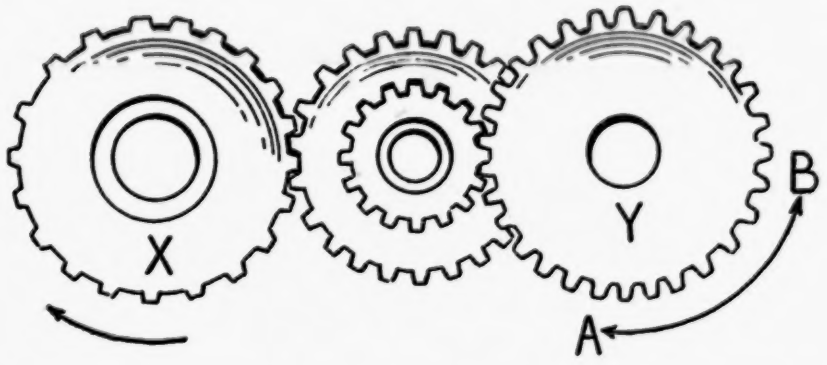
7. In which direction does the steel ball turn?
   - A. In direction A
   - B. In direction B
   - C. First in one direction then the other

Items 9 and 10 depend on the following diagram:

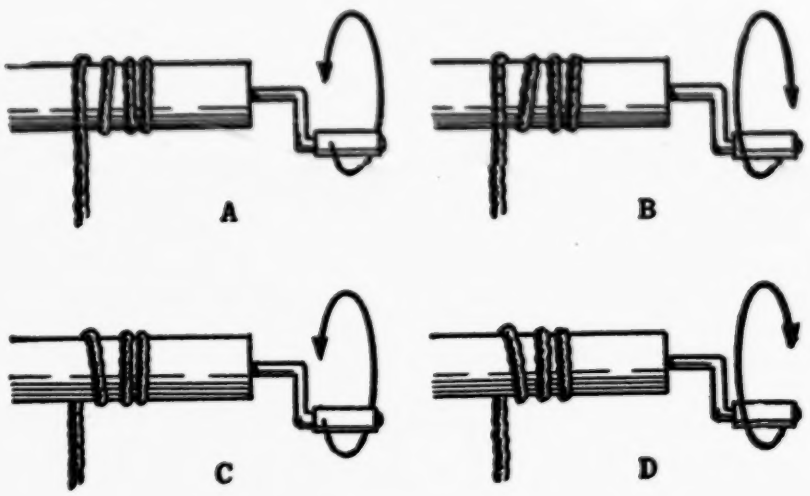


9. Which wheel will turn the smallest number of times per minute?
   - A. A
   - B. B
   - C. C
   - D. B and C
   - E. A, B, and C turn an equal number of times per minute.

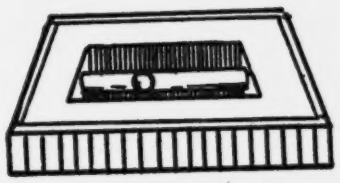
10. For the boat to go in direction 3 (shown by the heavy arrow), the paddlewheel (C)
   - A. must turn in direction 1.
   - B. must turn in direction 2.
   - C. may turn in either direction 1 or direction 2.



8. When gear X turns in the direction shown by the arrow, gear Y turns
   - A. in direction A.
   - B. in direction B.
   - C. first in one direction and then in the other.

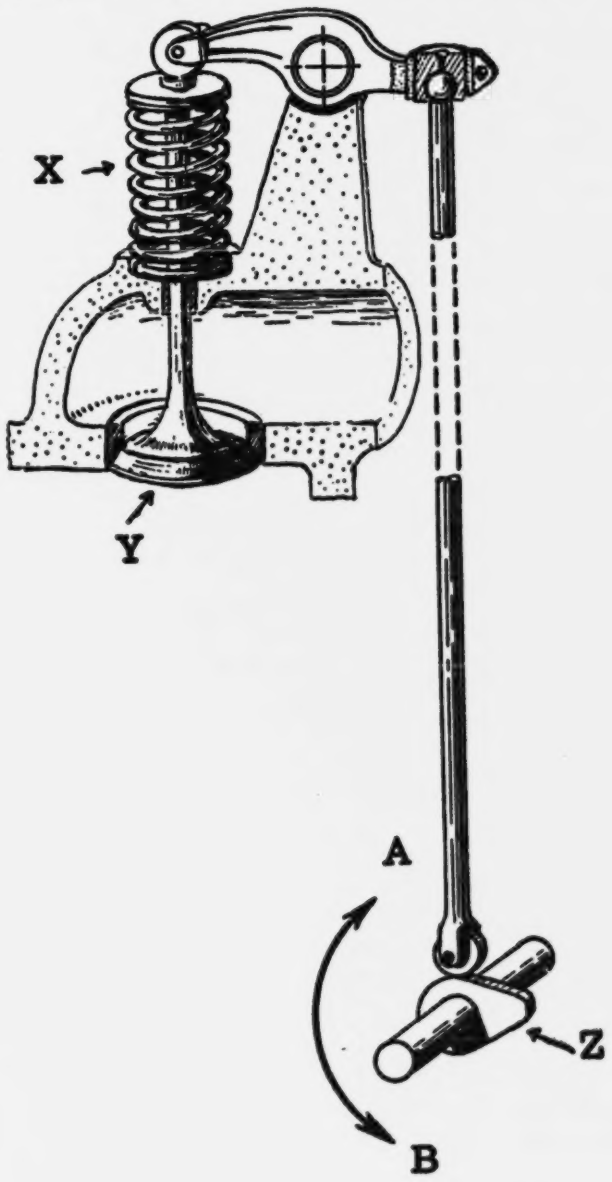


11. In which of the pictures is water being drawn up out of a well?
   - A. In A only
   - B. In B only
   - C. In A and B
   - D. In B and D
   - E. In B and C



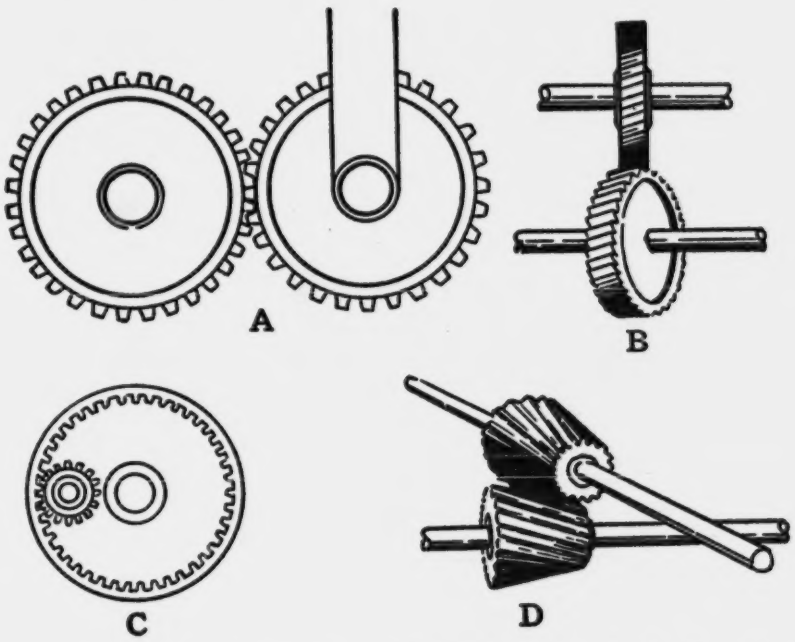
12. The spirit level has a bubble floating in liquid. When it is laid on a level surface the bubble is in the middle. When the bubble is at the left it means that the surface
    A. is tipped toward the observer.
    B. is tipped away from the observer.
    C. slopes downward to the left.
    D. slopes downward to the right.

Items 13 and 14 depend on the following diagram:



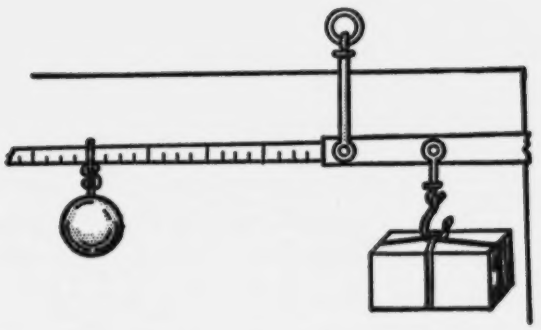
13. Valve Y will open once and close once if cam Z makes one-half of a complete turn from its present position, in
    A. direction A.
    B. direction B.
    C. either direction A or direction B.

14. The chief purpose of the spring (X) is to
    A. operate cam Z.
    B. open valve Y.
    C. close valve Y.



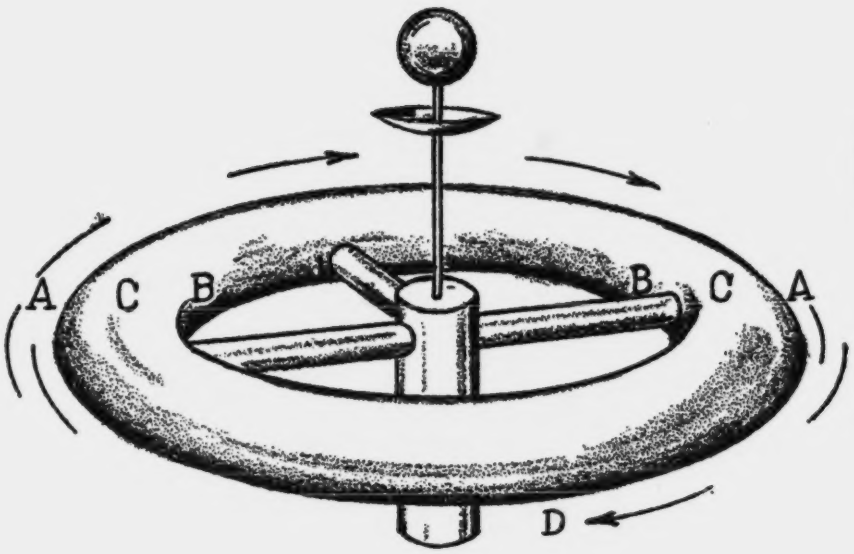
15. In which of the sets of gears shown do both gears turn in the same direction?
    A. A
    B. B
    C. C
    D. D

16. The parachute opens when the
    A. cords below it are pulled.
    B. cords below it break.
    C. cord above it pulls on it.
    D. balloon breaks.

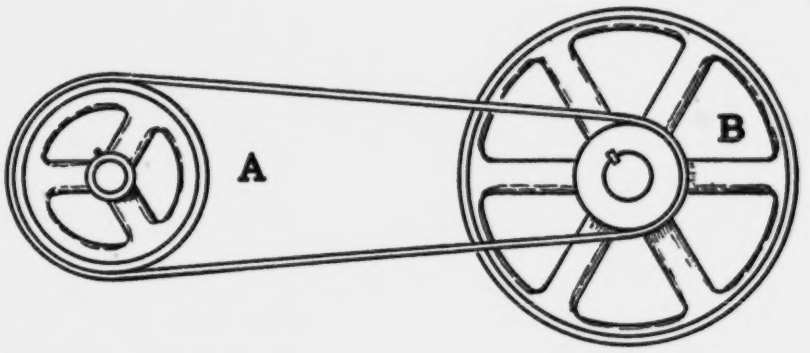


17. Which weighs more, the metal weight or the package?
    A. The package
    B. The metal weight
    C. They weigh the same.
    D. There is no way to tell.

Go on to the next page.

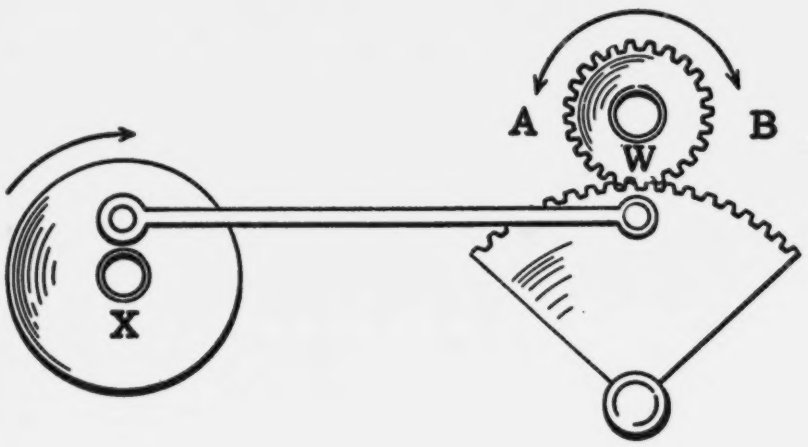


18. The space station is spinning around in order to provide artificial gravity for the people that live in it. Where is the floor?
    - A. At the outside of the rim, at A
    - B. At the inside of the rim, at B
    - C. On top at C
    - D. At the bottom
    - E. There is no way to tell.



20. Which wheel turns around the greater number of times in a minute?
    - A. A
    - B. B
    - C. The two wheels turn around the same number times in a minute.
    - D. It depends on the direction.

Stop here! Go back and check your work on this test (pages 8-11).



19. While wheel X turns round and round in the direction shown, wheel W turns
    - A. in direction A.
    - B. in direction B.
    - C. first in one direction and then in the other.

ARITHMETIC REASONING

1. To find 4 percent of a number you should
   A. multiply by 400
   B. multiply by 4.00
   C. multiply by .04
   D. divide by 400
   E. divide by .04

2. Bill wanted to know how many miles per hour he walks at his normal pace. He measured the length in feet of his back yard, and timed himself walking across it. In one minute he walked 320 feet. He multiplied this distance by 60. One other number is necessary to find Bill's rate of walking. What is the other number?
   A. The number of minutes in an hour
   B. The number of feet in a mile
   C. The number of feet he can walk in 30 minutes
   D. The number of yards in 320 feet
   E. The time he takes to walk 100 feet

3. A man wants to paint the floor of a room. He can figure out how much the paint will cost if he knows all of the following *except* the
   A. area of the room.
   B. cost per can of paint.
   C. number of ounces of paint per can.
   D. number of square feet an ounce of paint will cover.
   E. perimeter of the room.

4. A man pays a 2% sales tax on a piece of furniture. The tax amounts to $3.00. How much did the furniture cost?
   A. $6.00
   B. $15.00
   C. $150.00
   D. $600.00
   E. Not enough information is given.

5. You can find one-fifth of 4685 by
   A. multiplying by .20
   B. dividing by .20
   C. multiplying by 5
   D. dividing by ⅕
   E. dividing by 4685

6. A 23% sales tax on a watch amounts to $14.26. To find the price of the watch *without* taxes you would
   A. multiply by .23
   B. multiply by 23
   C. divide by 14.26
   D. divide by .23
   E. divide by 2300

7. A man invested $100 in a rare stamp. After 20 years, its value had increased by 150%. He sold it for its new value through an agent, who collected 10% commission. How much did the agent receive?
   A. $1.50
   B. $10.00
   C. $15.00
   D. $25.00
   E. $150.00

8. A salesman gets 12% commission on all items sold over a quota of 5. If he sells 8 items at $30 each, his commission is 12% of
   A. $240
   B. $90
   C. $30
   D. $8
   E. $5

9. Bananas are selling at 17 cents per pound. Mrs. Jones buys 6 bananas. Their total weight is 2½ pounds. She gives the clerk $5.00, and he accidentally gives her 25 cents too much change. What fact that is given above is *not* needed to figure out how much change she receives?
   A. Number of bananas bought (6)
   B. Price per pound (17 cents)
   C. Total weight (2½ pounds)
   D. Amount of money given clerk ($5.00)
   E. Amount of extra change (25 cents)

Go on to the next page.

For Problems 10-14, decide whether addition, subtraction, multiplication, or division should be done *first* in order to do the problems most easily. DO NOT WORK THE PROBLEMS. Mark answer space A, B, C, or D to indicate the first operation, as follows:

A. Add
B. Subtract
C. Multiply
D. Divide

10. Six persons are to share what is left of a bonus of $200 after $15 has been paid for a party. How much will each person receive?

11. A man wants to build a garage with 10 feet of storage space at one end. He needs 17 feet for his car. How long must the garage be?

12. Local newspapers sell for 5 cents; out-of-town papers cost 10 cents. How much would you pay for one local and five out-of-town papers?

13. If a monthly magazine costs $3.40 a year for a subscription, and 35 cents a copy on the newsstand, how much do you save in a year by having a subscription?

14. A man makes $450 in one month. He pays $50 of this for taxes. What percentage of his wages went for taxes?

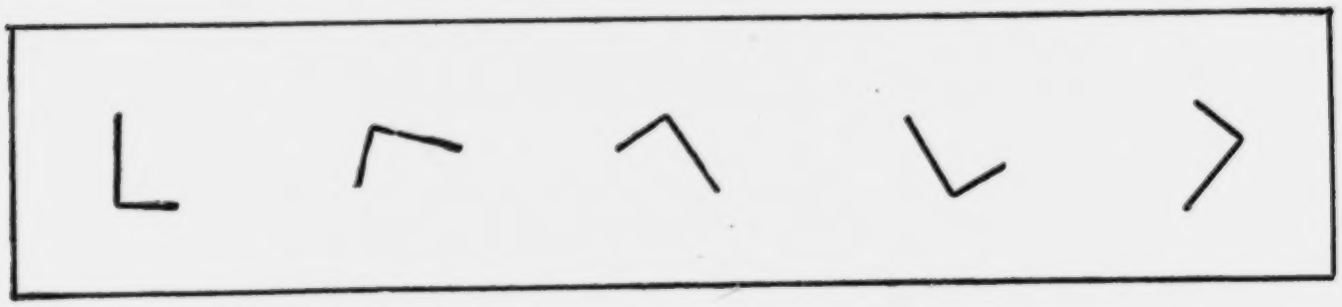
Problems 15-16 are based on the following information:
A family buys a TV set on a "no down payment" 15-month installment plan. The 15 installments are equal. The price is $200. When the set is paid for, the family has paid $260, plus a repair bill. They trade the TV set in on a new one at the end of 15 months, and receive a $100 trade-in allowance.

15. What fact that is given is *not* needed to figure out the annual rate of interest?
A. Price of set ($200)
B. Amount paid ($260)
C. Number of months (15)
D. The fact that the installments are equal
E. Trade-in allowance ($100)

16. What other information must be given before one can figure out the average monthly cost of owning the set for 15 months?
A. Cost of the new set
B. Amount of dealer's profit
C. Average monthly payment
D. Annual interest rate
E. Amount of the repair bill

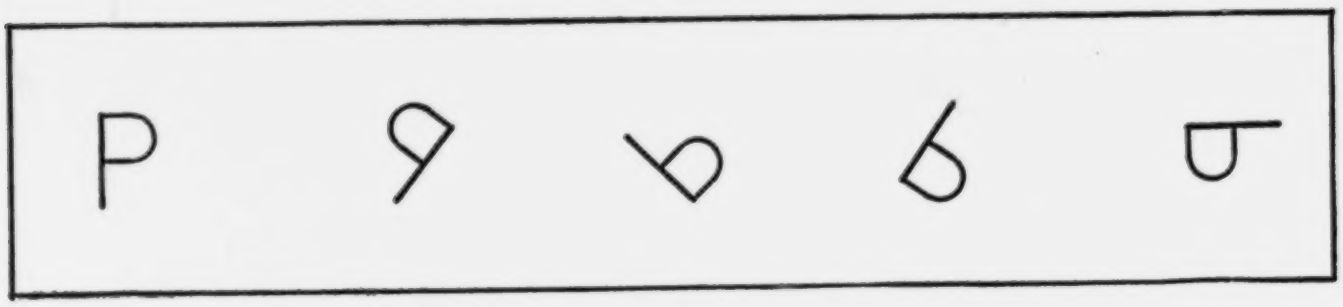
VISUALIZATION IN TWO DIMENSIONS.

Directions: Look at the drawings below. The first drawing is shaped like the letter L. The rest of the drawings are like the first, except that they have been turned in different directions.



If you think of the drawing at the left above as being made out of wire and lying on a table, the positions shown in each of the other four drawings could be taken simply by turning the wire figure at the left around, without lifting it off the table.

Now look at the next row of drawings. The first drawing is shaped like the letter P. But even if the rest of the drawings were turned around, they would still be backwards; you would have to lift the figure at the left off the table and flip it over to make any of the other figures.

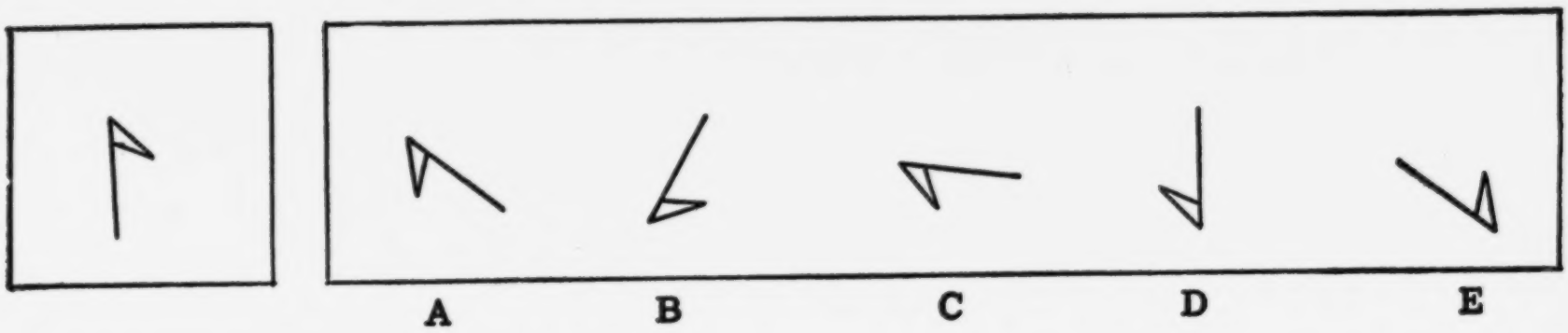


In this test each problem has one drawing at the left and five similar drawings to the right of it but only one of the five drawings on the right exactly matches the drawing at the left if you turn it around. The rest of the drawings are backwards even when they are turned around.

Now look at the sample problem below.

Which one of the choices, when turned around, exactly matches the diagram at the left?

S1.



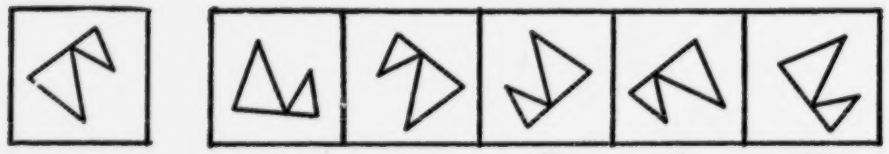
You should have picked choice D. All of the other choices have been "lifted off the table and flipped over" as well as turned around, and thus are backwards. For the sample problem, answer space D has been marked on your answer sheet.

For each problem in this test, choose the one drawing which, when turned around or rotated, is exactly like the basic drawing at the left.

Stop here! Wait for further directions. Do not turn the page.

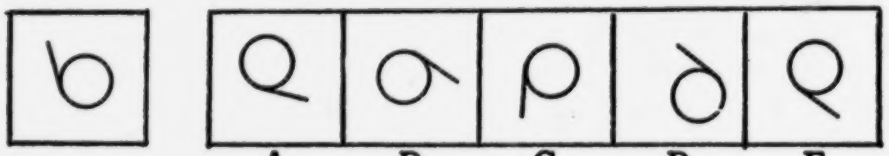
Start here:

1



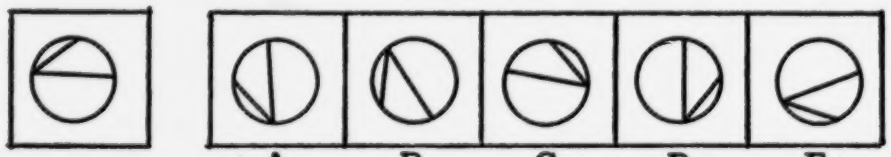
A B C D E

2



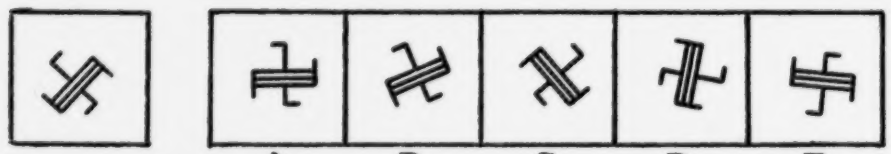
A B C D E

3



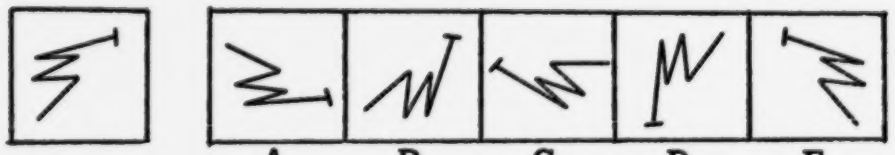
A B C D E

4



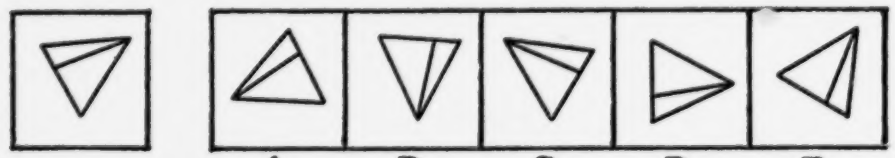
A B C D E

5



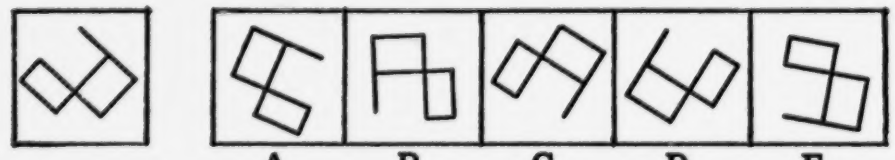
A B C D E

6



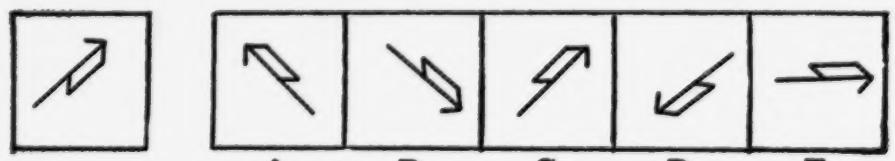
A B C D E

7



A B C D E

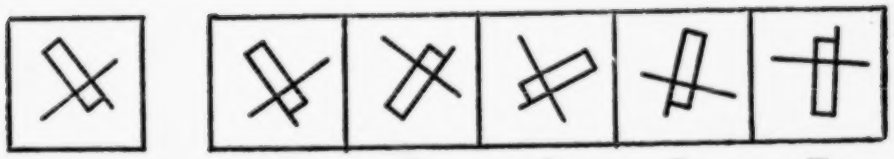
8



A B C D E

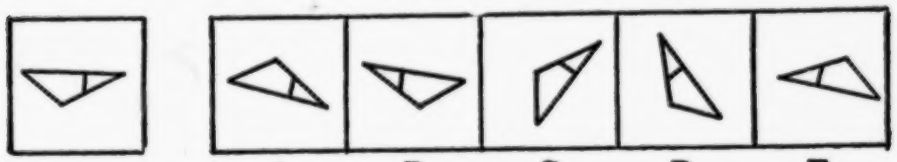
Go on to the next page.

9



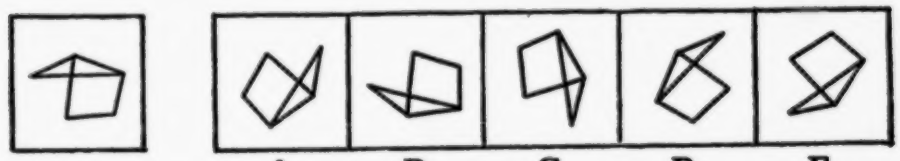
A B C D E

10



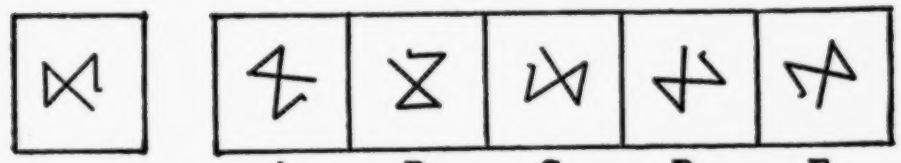
A B C D E

11



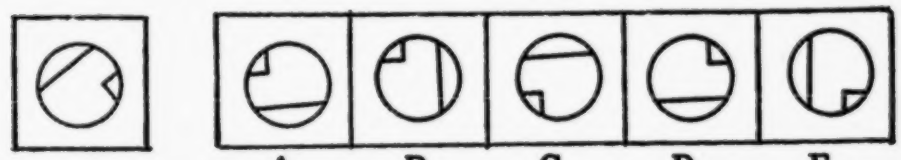
A B C D E

12



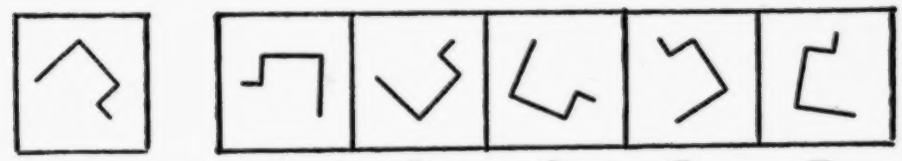
A B C D E

13



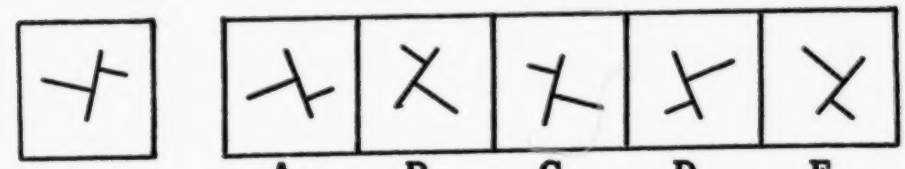
A B C D E

14



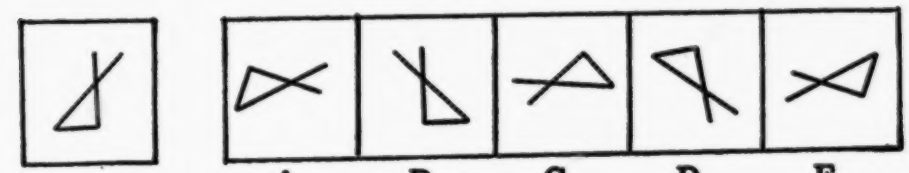
A B C D E

15



A B C D E

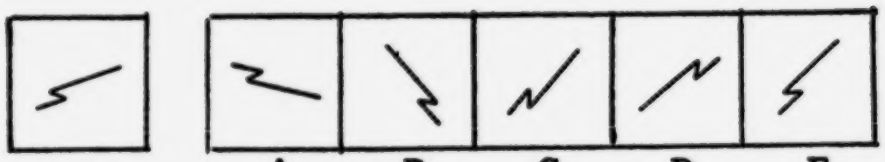
16



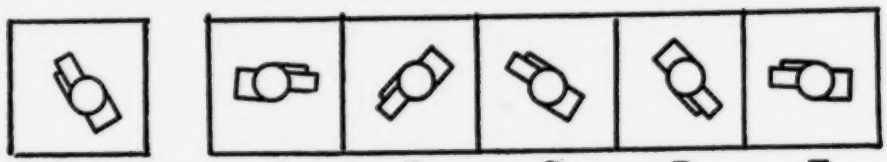
A B C D E

Go on to the next page.

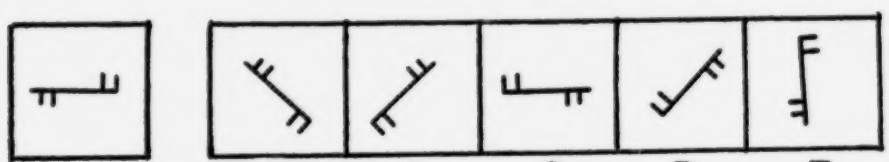
17



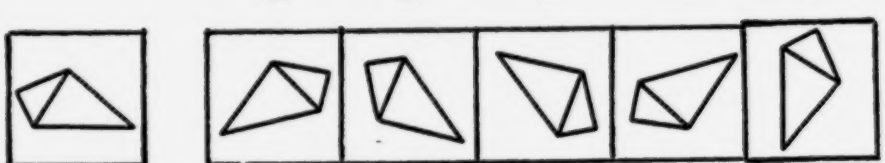
18



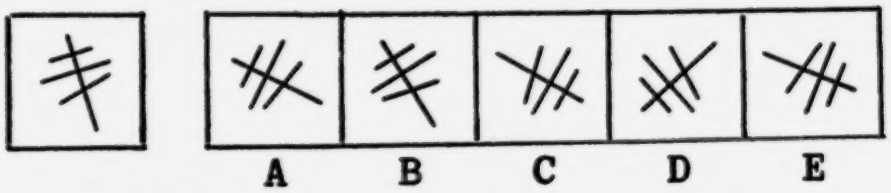
19



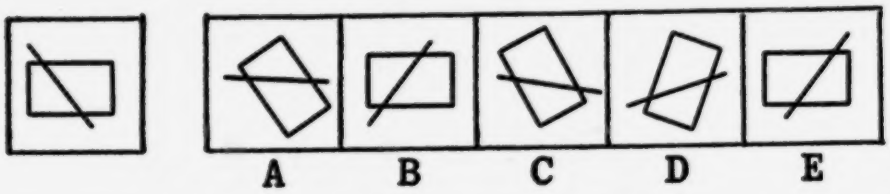
20



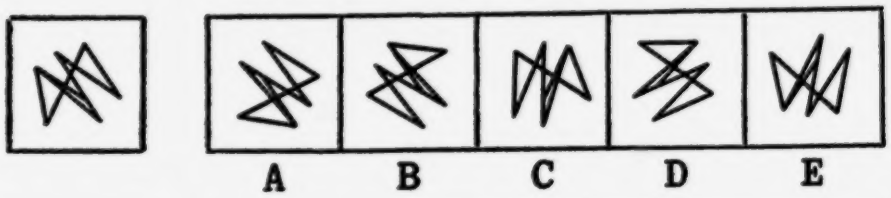
21



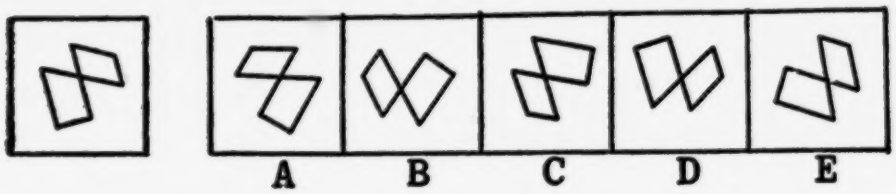
22



23



24



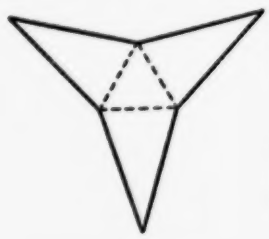
Stop here. Go back and check your work on this test.

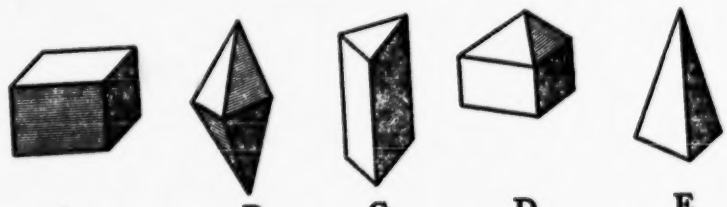
VISUALIZATION IN THREE DIMENSIONS

Directions: Each problem in this test has a drawing of a flat piece of metal at the left. At the right are shown five objects, only one of which might be made by folding the flat piece of metal along the dotted line. You are to pick out the one of these five objects which shows just how the piece of flat metal will look when it is folded at the dotted lines. When it is folded, no piece of metal overlaps any other piece, or is enclosed inside the object.

Now look at the sample item below.

S 1.



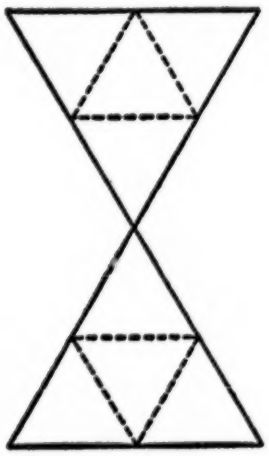


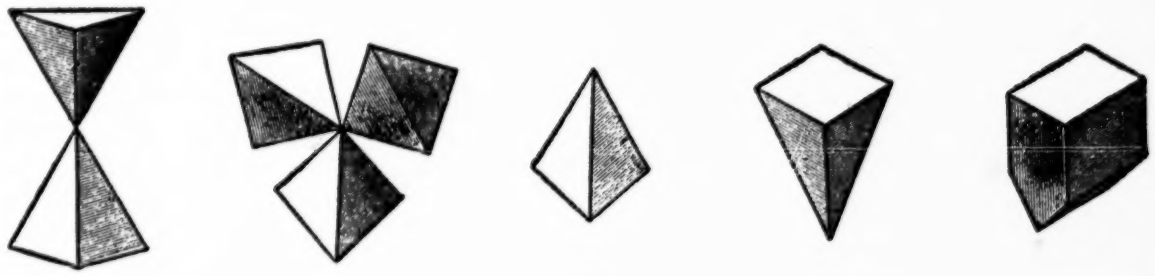
Of the five objects shown, only **E** could be made from the flat piece shown at the left by folding it at each of the dotted lines. **E** shows how the flat piece would look after being folded. Answer space **E** has been marked for sample item **S1** on your answer sheet.

Remember, all folds are indicated by dotted lines; the solid lines show the cuts in the piece, and parts are not folded inside of other parts of any objects (in other words, there is no overlapping).

Wait for further directions. Do not turn the page.

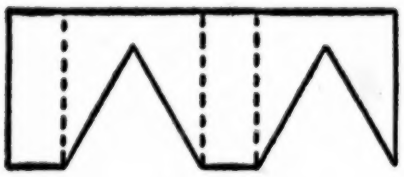
1

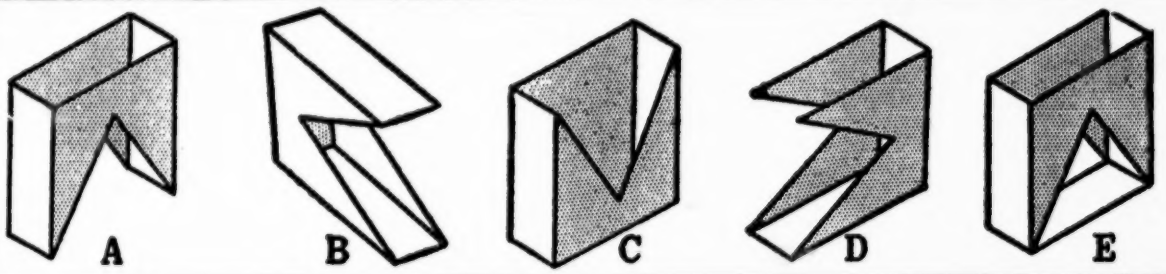




A B C D E

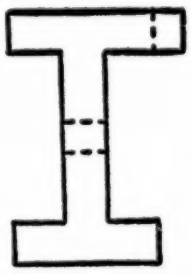
2

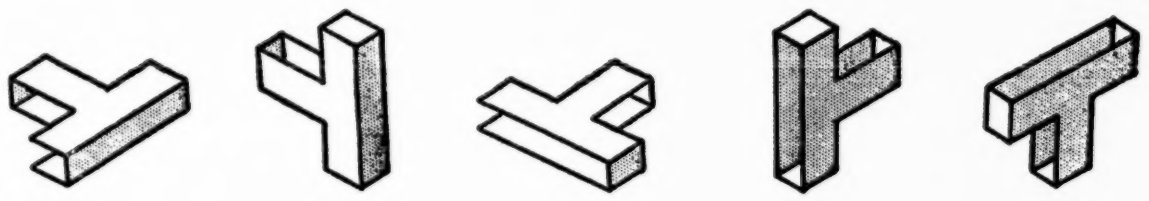




A B C D E

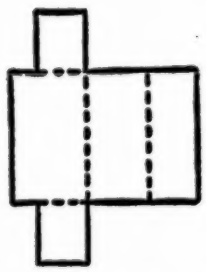
3

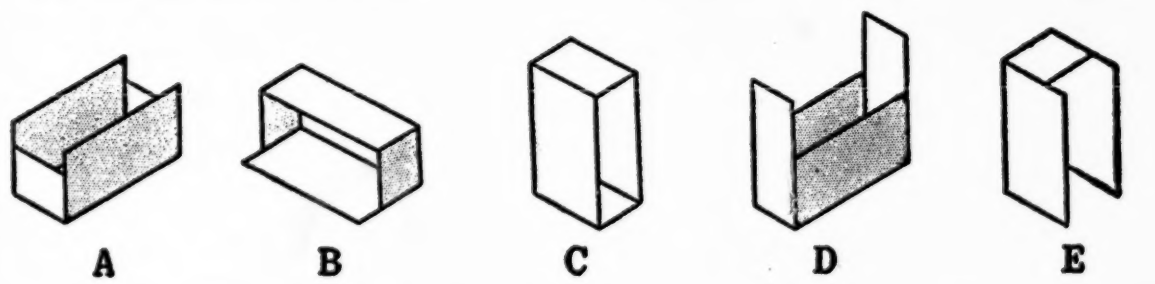




A B C D E

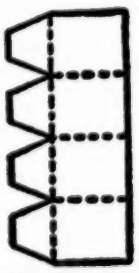
4

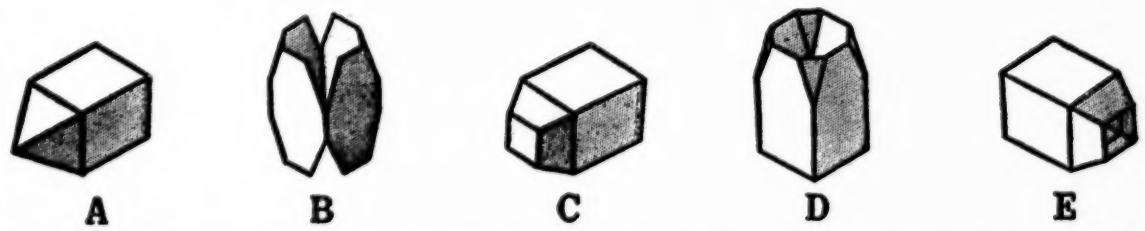




A B C D E

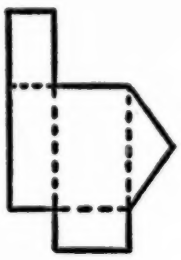
5

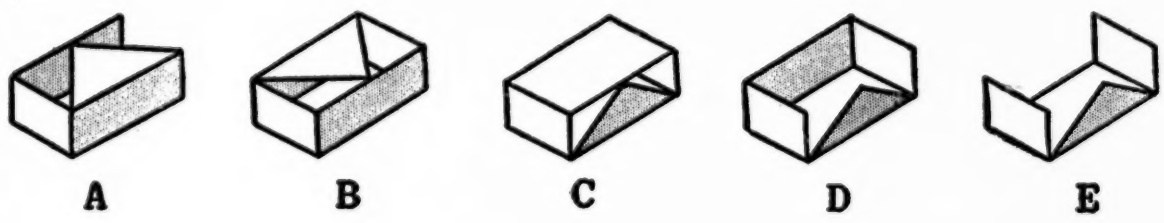




A B C D E

6





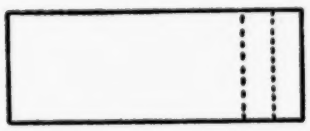
A B C D E

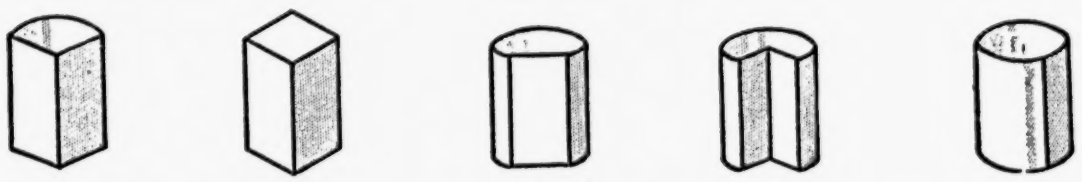
Go on to the next page.

7

A B C D E

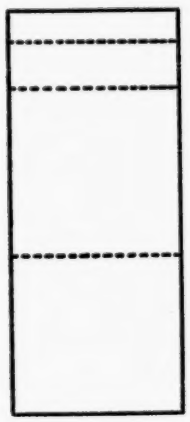
8





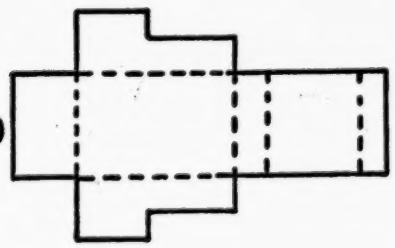
A B C D E

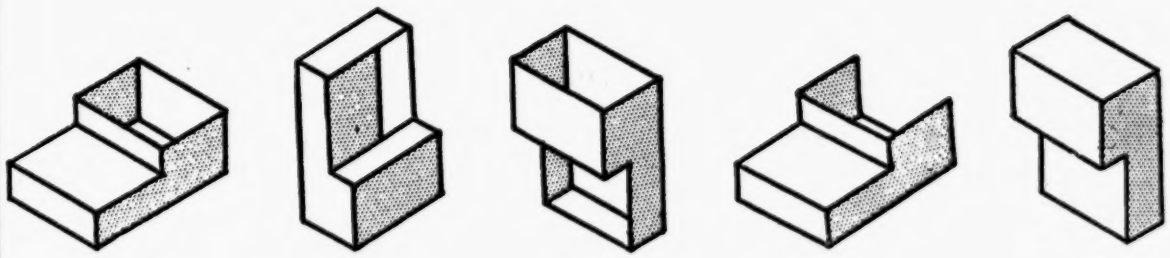
9



A B C D E

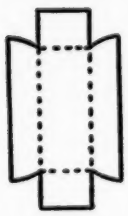
10

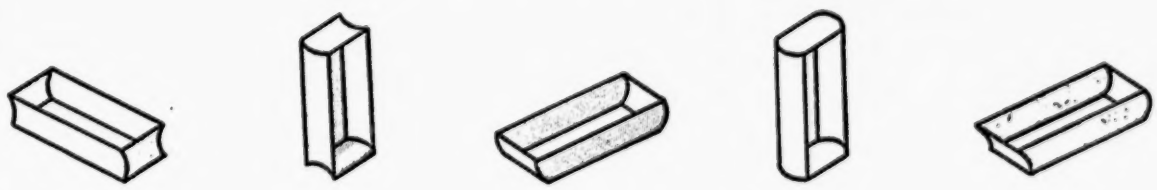




A B C D E

11

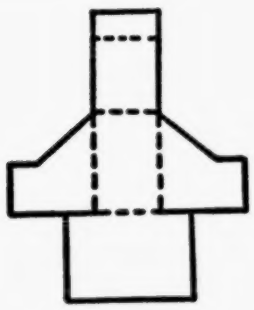


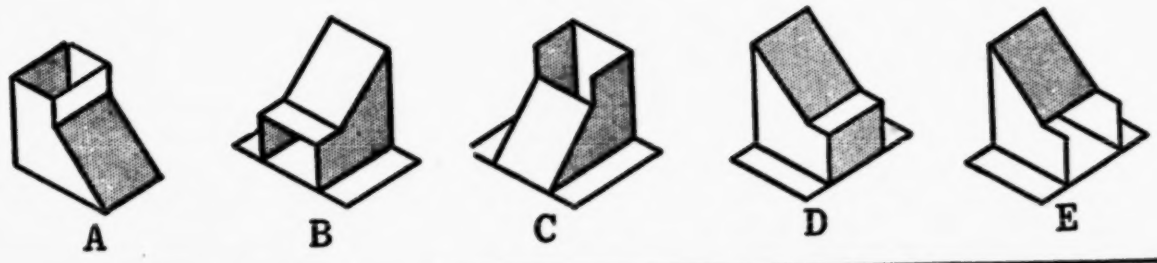


A B C D E

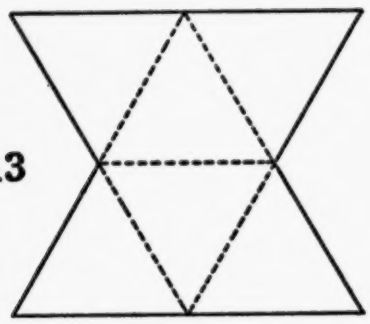
Go on to the next page.

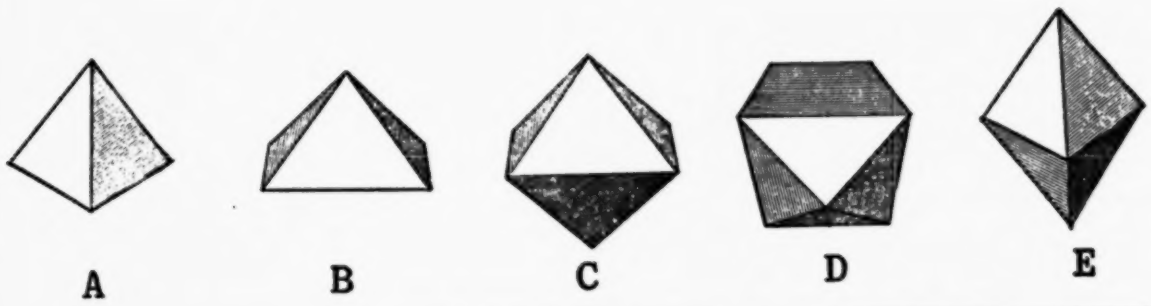
12



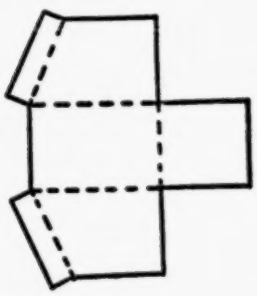


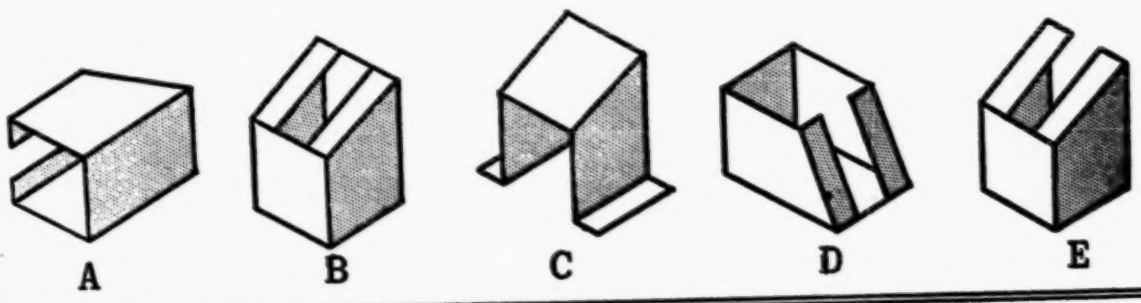
13



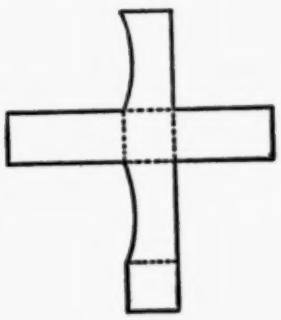


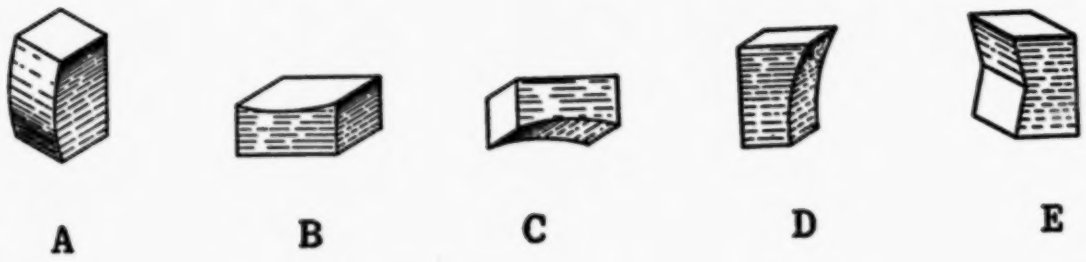
14



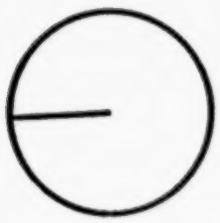


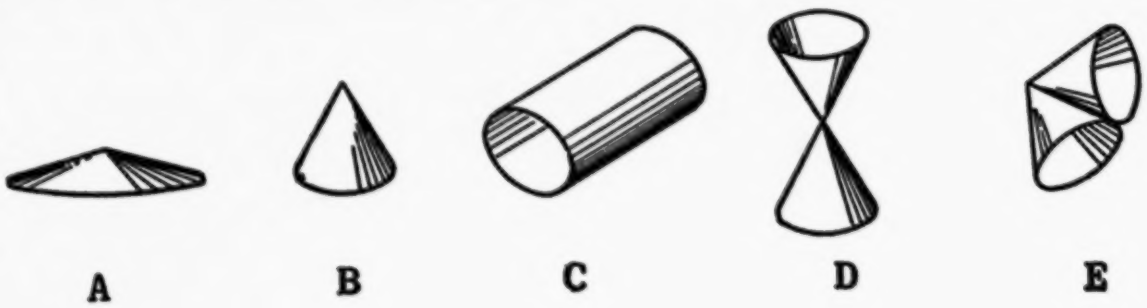
15





16





Stop here. Go back and check your work on this test (pages 20-22).

READING COMPREHENSION

Directions: In this test you will be given some passages to read. After you read each passage you will have to answer a number of questions about what you have read. You may look back at the passage as often as you like. You should work quickly but carefully. You will probably not have time to finish the test. Do the best you can on each item. ***Answer the questions about one passage before you go on to the next.***

Stop here! Wait for further directions. Do not turn the page.

(1) The sloth is a preposterous animal. In motion
(2) it looks like a slowed-up movie. And motionless
(3) (its usual state) it looks like nothing at all. Its face
(4) is almost featureless and wholly expressionless. In
(5) range of emotions it resembles a vegetable.
(6) The sloth is biologically such a freakish paradox
(7) that even biologists seem to have had difficulty
(8) labeling it. Perhaps in desperation, they assigned
(9) sloths to that catch-all category of Mammalia
(10) which is known as "Edentata." This, as any ancient
(11) Roman would tell you, means "toothless ones"—
(12) but actually the sloth has 18 teeth!
(13) Much of the sloth's life is spent awkwardly dan-
(14) gling upside down, suspended from a tree branch
(15) by hooks at the ends of its limbs, and eating the
(16) one item to which its dismal diet is generally lim-
(17) ited—the coarse leaves of the Cecropia tree.
(18) At rest, curled up into a ball in the crotch of
(19) a tree, a sloth is indistinguishable from a cluster
(20) of leaves. Camouflage is its outer line of defense
(21) against its enemies. If this fails, its second line of
(22) defense, passive resistance, comes into action—if
(23) lying perfectly still while one's assailant tries un-
(24) successfully to claw through one's felted fur and
(25) tough skin or to crush one's unusually sturdy ribs
(26) can be called "action."
(27) Thus despite their seeming unfitness for life on
(28) this high-speed, high-pressure, competitive planet
(29) of ours, they have continued to exist through the
(30) eons. Dull-witted, abnormally unaggressive, apa-
(31) thetic—the ultimate in nothingness—still sloths
(32) somehow survive!

1. Sloths present a problem to the biologist because they are
   - A. hard to classify.
   - B. rare.
   - C. uninteresting.
   - D. slow.
   - E. not really animals.

2. The writer refers to an "ancient Roman" (lines 10 and 11) because
   - A. sloths are found in Italy.
   - B. sloths live to a great age.
   - C. the Romans made pets of sloths.
   - D. the writer is Roman.
   - E. "Edentata" is Latin.

3. The food of full-grown sloths consists chiefly of
   - A. vegetables of all kinds.
   - B. tree bark only.
   - C. insects only.
   - D. one kind of leaf.
   - E. one kind of fruit.

4. A major defense of the sloth against its enemies is its
   - A. agility.
   - B. sharp teeth.
   - C. invisibility.
   - D. intelligence.
   - E. hooks on its limbs.

5. All of the following adjectives apply to the sloth **except**
   - A. absurd.
   - B. slow.
   - C. harmless.
   - D. unusual.
   - E. excitable.

6. Which of the following words best describes the sloth?
   - A. Aggressive
   - B. Loathsome
   - C. Frightening
   - D. Graceful
   - E. Sluggish

7. In the fight for survival, sloths are apparently
   - A. wiping out their enemies.
   - B. holding their own.
   - C. dying out rapidly.
   - D. already extinct.
   - E. becoming more aggressive.

8. Where do sloths spend most of their lives?
   - A. In trees
   - B. On the ground
   - C. In caves
   - D. In swamps
   - E. In bushes

Go on to the next page.

(1) Man usually thinks of himself as a self-sufficient being, but in some ways he is really no more self-sufficient than a fish, totally dependent on the sea in which it is immersed. Man, too, lives in a "sea." The earth's atmosphere may be thought of as a vast ocean of air, hundreds of miles deep. The earth, then, is the floor of this "ocean." If man is deprived of the life-giving medium in which he is immersed, he dies—gasping like a trout removed from the stream. And like a fish plucked from the ocean's depths, a man lifted too many miles from the floor of *his* ocean would die violently from the force of his own internal pressures. Without the atmosphere, all forms of life on earth would cease.

9. According to the passage, man, in regarding himself as self-sufficient, is
   - A. too modest.
   - B. under an illusion.
   - C. correct.
   - D. lying.
   - E. stupid.

10. What is the "life-giving medium" mentioned in line 8?
   - A. Food
   - B. Water
   - C. Air
   - D. Space
   - E. Mother Earth

11. Which of the following functions of the atmosphere does the passage touch upon?
   - A. Transmitting sound
   - B. Producing weather variations
   - C. Providing air to breathe
   - D. Protecting from meteors
   - E. Protecting from radiation

12. Which of the following functions of the atmosphere does the passage touch upon?
   - A. Keeping the ocean from evaporating
   - B. Carrying water vapor
   - C. Supporting combustion
   - D. Producing air pressure
   - E. Regulating temperature

13. According to the passage, man lives at the bottom of a "sea" of
   - A. air.
   - B. water vapor.
   - C. sunlight.
   - D. darkness.
   - E. empty space.

Go on to the next page.

(1) "Do you wiz zo haut can be?" That was what the
(2) guide asked, when we were looking up at the bronze
(3) horses on the Arch of Peace. It meant, "Do you
(4) wish to go up there?" I give it as a specimen of
(5) guide-English. These are the people who make life
(6) a burden to the tourist. Their tongues are never
(7) still. They talk forever and forever, and that is the
(8) kind of billingsgate they use. Inspiration itself could
(9) hardly comprehend them. If they would show you a
(10) masterpiece of art, or a venerable tomb, or a
(11) prison-house, or a battlefield hallowed by touching
(12) memories, historical reminiscences, or grand tradi-
(13) tions, and then step aside and hold still for ten
(14) minutes and let you think, it would not be so bad.
(15) But they interrupt every dream, every pleasant train
(16) of thought, with their tiresome cackling. Sometimes
(17) when I have been standing before some cherished
(18) old idol of mine that I remembered years and
(19) years ago in pictures in the geography at school, I
(20) have thought I would give a whole world if the
(21) human parrot at my side would suddenly perish
(22) where he stood and leave me to gaze and ponder
(23) and worship.

14. In line 1 of this paragraph, what does "wiz" mean?
    A. With
    B. Wish
    C. Wide
    D. Will
    E. Wise

15. What does the word "that" in line 7 mean?
    A. The tourist
    B. Guides
    C. The Arch of Peace
    D. The quotation
    E. A burden

16. "Billingsgate" as used in line 8 means
    A. abusive language.
    B. coarse, vulgar language.
    C. purposely confusing language.
    D. incomprehensible gibberish.
    E. a point of interest to tourists.

17. In the writer's opinion, guide-English is
    A. Not detailed enough
    B. Easily understood
    C. Very difficult to understand
    D. Too Americanized
    E. Clever

18. The author complains that guides
    A. talk too much.
    B. charge too much.
    C. don't try to explain.
    D. are dirty.
    E. tell falsehoods.

19. Who is the human parrot (line 21)?
    A. The author
    B. The reader
    C. The idol
    D. The guide
    E. The tourist

20. Apparently the writer would like to view historic relics
    A. in silence.
    B. with an American guide.
    C. with a parrot.
    D. with a close friend.
    E. with his old school teacher.

Go on to the next page.

Rarely has British strategy been so bad as in the war on the American colonies. Every rule of warfare was broken. "Go after and destroy your enemy" is a sound principle. "Concentrate your force" is a sound method. "Stick to your objective" is common sense. Britain's enemy was the colonial army led by George Washington. The force was made up of Howe's and Burgoyne's troops. The objective was to defeat the army led by Washington. Coordinating these activities was itself an essential step in carrying out sound military principles.

This coordination was the responsibility of the King's War Minister, Lord Germain, a man with a demonstrated talent for bungling. Germain knew that Howe intended to try to capture Philadelphia, the seat of the revolutionary government, avoiding, if possible, any encounter with the colonial army. He also knew that Howe's army would be moving in an opposite direction from Burgoyne's, thus splitting the British force. And Germain was aware of the lack of concentration on any single set of immediate objectives by the generals involved. Yet he did absolutely nothing to correct the situation.

21. What war is being discussed?
    - A. French and Indian War
    - B. American Revolution
    - C. War of 1812
    - D. British Civil War
    - E. None of these

22. Howe was most interested in
    - A. joining forces with Burgoyne.
    - B. routing Washington's army.
    - C. capturing Washington.
    - D. marching on Philadelphia.
    - E. doing battle immediately.

23. From the passage one can conclude that the principles of sound strategy were
    - A. followed by the British.
    - B. followed by the Americans.
    - C. ignored by the British.
    - D. ignored by the Americans.
    - E. not known at that time.

24. Which of the following military principles was **not** indicated in the passage to be sound or sensible?
    - A. Capture the enemy's capital.
    - B. Don't lose sight of your purposes.
    - C. Seek out the foe and wipe him out.
    - D. Keep your forces together.
    - E. Coordinate your efforts.

25. Germain's actions could probably best be called
    - A. patriotic.
    - B. sound.
    - C. talented.
    - D. treacherous.
    - E. blundering.

Go on to the next page.

(1) In May, when sea-winds pierced our solitudes,
(2) I found the fresh Rhodora in the woods,
(3) Spreading its leafless blooms in a damp nook,
(4) To please the desert and the sluggish brook.
(5) The purple petals, fallen in the pool,
(6) Made the black water with their beauty gay;
(7) Here might the red-bird come his plumes to cool,
(8) And court the flower that cheapens his array.
(9) Rhodora! If the sages ask thee why
(10) This charm is wasted on the earth and sky,
(11) Tell them, dear, that if eyes were made for seeing,
(12) Then Beauty is its own excuse for being:
(13) Why wert thou there, O rival of the rose!
(14) I never thought to ask, I never knew:
(15) But, in my simple ignorance, suppose
(16) The self-same Power that brought me there brought you.

26. In this poem, the Rhodora is a
    A. red-bird.
    B. brook.
    C. damp woods.
    D. purple flower.
    E. rose.

27. In line 4, "desert" probably means
    A. beach.
    B. sandy wastelands.
    C. deserted spot.
    D. dry area.
    E. earth.

28. The word "array" in line 8 refers to
    A. the rose.
    B. water.
    C. feathers.
    D. earth.
    E. home.

29. What is the best answer to the question the sages might ask (beginning line 9)?
    A. Charm is wasted on the earth and sky.
    B. Eyes were made for seeing.
    C. I never knew.
    D. I never thought to ask.
    E. Beauty is its own excuse for being.

30. In line 11, the word "dear" is addressed to
    A. a flower.
    B. the sage.
    C. the reader.
    D. the red-bird.
    E. the writer's wife.

31. What does "thou" mean in line 13?
    A. Beauty
    B. Sages
    C. A red-bird
    D. A rose
    E. A Rhodora

32. The "rival of the rose" (line 13) rivals it in
    A. seeking this place.
    B. beauty.
    C. the red-bird's favor.
    D. redness.
    E. popularity.

Go on to the next page.

(1) We live on the outer crust of the earth. Nowadays
(2) this crust contains many different kinds of surfaces.
(3) We have plains and meadows, forests and woods,
(4) deserts and mountains. In the early days of the
(5) earth, its surface was different. It looked something
(6) like the surface of the moon, with many high, bare
(7) volcanic peaks. But atmosphere and water have
(8) worked together to change the crust of the earth,
(9) by wearing down some mountains, building up
(10) others, and generally altering the original shapes
(11) and surfaces. There is no reason to think that a
(12) point of equilibrium has been reached, and that
(13) the evolution of the earth will not continue in-
(14) definitely in the future.

33. In the early days of the earth, its surface was more
- A. level.
- B. varied.
- C. barren.
- D. beautiful.
- E. suitable for vegetation.

34. The word "atmosphere" in line 7 refers to
- A. the quality of sunlight.
- B. the mood or quality of the earth.
- C. the temperature of the earth's crust.
- D. the chemicals on the earth's crust.
- E. none of these.

35. The word "evolution" in line 13 refers to
- A. the earth's revolution around the sun.
- B. changes in the earth's surface.
- C. changes in the atmosphere.
- D. political and social changes.
- E. none of the above.

36. Changes in the earth's surface
- A. have stopped.
- B. will probably stop relatively soon.
- C. are expected to slow down.
- D. are expected to speed up.
- E. are not expected to cease.

37. The best title for this passage would be
- A. Earth and Moon—how they differ.
- B. The Changing Surface of our Earth.
- C. Atmosphere and Water.
- D. The Earth's Future.
- E. How Life Came to our Earth.

(1) Literature is the art of selection and ruthless ex-
(2) clusion, or, as Flaubert has said, it is "the art
(3) of making sacrifices." Chekhov, another enemy of
(4) the unnecessary word, says: "If in the first chapter
(5) you say that a gun hung on the wall, in the second
(6) or third chapter it must without fail be discharged."
(7) He is right. The writer who seeks to emulate de
(8) Maupassant and Poe in producing stories with pre-
(9) cisely controlled plots cannot afford to ignore his
(10) advice.

38. Who makes the sacrifices referred to in line 3?
- A. Literary critics
- B. Bad writers
- C. Good writers
- D. Bad readers
- E. Good readers

39. What is the apparent attitude of the author of this passage towards Flaubert's view?
- A. Agreement
- B. Indifference
- C. Mild disagreement
- D. Strong disagreement
- E. Perplexity

40. Chekhov thinks the gun "must without fail be discharged" (line 6) because he dislikes
- A. his enemies.
- B. ruthless people.
- C. writers.
- D. writing.
- E. wordiness.

41. Chekhov's statement suggests that every word in a story must
- A. be grammatically correct.
- B. be short.
- C. be familiar.
- D. serve a purpose.
- E. appear again.

42. The reference in line 7 to "the writer" means
- A. the author of this passage.
- B. Chekhov.
- C. Flaubert.
- D. de Maupassant and Poe.
- E. no one writer in particular.

43. The word "his" (line 9) refers to
- A. Flaubert.
- B. Chekhov.
- C. de Maupassant.
- D. Poe.
- E. no one writer in particular.

Go on to the next page.

As a dominant figure in India, Clive was followed by Warren Hastings, who eventually became the first Governor-General of India. Clive left India for the last time in 1767, and a year later Hastings was appointed to the Council of Calcutta. This position enabled him to observe that India was engulfed in misery, wretchedness, and mismanagement. Many of the East India Company's employees were becoming rich through corrupt practices, which seriously harmed not only the owners of the company but the people of India as well. Hastings worked tirelessly and courageously to better local conditions so that both England and the Indian people could prosper. This won for him the gratitude of the Indian people. However, political intrigues were going on in England, and Hastings was a convenient scapegoat. An impeachment trial against him was begun in 1788. Eventually he was acquitted and fully exonerated, both officially and in the public's eyes. As a result of the trial, the public became aware of many injustices which had existed in India, and supported the need for honesty and humanity in managing colonial affairs.

44. Who does the passage indicate profited from corruption?
    A. The employees of the East India Company
    B. The owners of the East India Company
    C. The British government
    D. The people of England
    E. Men like Clive and Hastings

45. According to the passage, Hastings was
    A. arrogant and proud.
    B. popular among the Indians.
    C. a clever and ruthless leader.
    D. popular among the British politicians.
    E. corrupt.

46. Who does the passage indicate governed India during the period when Hastings was on the Council of Calcutta?
    A. A Viceroy
    B. A Governor-General
    C. Clive
    D. The Council of Calcutta
    E. The passage doesn't say.

47. Why was Hastings impeached?
    A. He had been guilty of corruption in office.
    B. He had been lax in his governing of India.
    C. The Indians demanded it.
    D. It suited the politicians.
    E. It suited the East India Company.

48. What was one of the results of Hastings' trial?
    A. A public which became interested in Indian affairs
    B. A stricter government for India
    C. More self-government for India
    D. A public which became hostile to the East India Company
    E. Hastings was sentenced to prison

Stop here. Go back and check your work on this test (pages24-30).

INFORMATION TEST—Part I

Directions: In this test you will be asked a large number of questions about many different things. Some of them will be very easy for you and some will be very hard. Do not become discouraged if there are many you cannot answer. No one will know about all of the things asked. But be sure to read every question. Even though there are many very hard questions, there are also some very easy ones that you will certainly be able to answer correctly, and these are mixed in among the hard ones. Read every question!

Do the best you can to answer every item. If you have no idea of the right answer to an item, leave it blank. But if you think you know the answer, even though you are not sure, mark your choice. These "hunches" are often right.

Do not mark more than one answer for any question. There is only one right answer for each question. Pick the one that you think is best. Work rapidly. If you cannot answer a question at once, go on to the next one and go back later to the ones you skipped, if you have time. Begin now.

1. To surrender means to
   - A. fight.
   - B. conquer.
   - C. retreat.
   - D. surround.
   - E. yield.

2. A purpose of lubrication is to
   - A. prevent motion.
   - B. increase heat.
   - C. reduce friction.
   - D. prevent warping.
   - E. remove dirt.

3. Which of these numbers is a perfect square?
   - A. 3
   - B. 5
   - C. 7
   - D. 9
   - E. None of the above

4. A vacuum is a space containing
   - A. ozone.
   - B. helium.
   - C. carbon monoxide.
   - D. nitrogen.
   - E. nothing.

5. Which of these methods is not normally used to join two metal parts?
   - A. Soldering
   - B. Bolting
   - C. Riveting
   - D. Nailing
   - E. Welding

6. To retain means to
   - A. get.
   - B. give up.
   - C. keep.
   - D. lose.
   - E. create.

7. Which of the following conditions will not cause a moving car to stop or stall?
   - A. Broken axle
   - B. Vapor lock
   - C. Frozen piston
   - D. Brake fade
   - E. Disconnected battery ground

8. An isosceles triangle always has
   - A. a right angle.
   - B. two equal sides.
   - C. three equal sides.
   - D. an obtuse angle.
   - E. no equal sides.

9. The device designed to prevent an overload of an electric circuit is called a
   - A. rheostat.
   - B. fuse.
   - C. voltmeter.
   - D. plug.
   - E. cell.

10. One-celled animals are called
    - A. protozoa.
    - B. fungi.
    - C. bacteria.
    - D. bacilli.
    - E. viruses.

11. A diagram is a kind of
    - A. route.
    - B. building.
    - C. measurement.
    - D. drawing.
    - E. grammatical error.

12. Which of these will not cause an auto engine to overheat?
    - A. Slipping fan belt
    - B. Retarded spark
    - C. Blown head gasket
    - D. Corroded water jacket
    - E. Flooding carburetor

13. Atoms combine to form
    - A. electrons.
    - B. protons.
    - C. ions.
    - D. nuclei.
    - E. molecules.

14. Which of these is the smallest amount?
    - A. 1.02
    - B. 1.000048
    - C. 1.013
    - D. 1.00020001
    - E. 1.1

15. The ordinary electric light bulb consists of a filament surrounded by
    - A. neon.
    - B. fluorine.
    - C. compressed oxygen.
    - D. carbon dioxide.
    - E. a partial vacuum.

16. Which of these is classified as a fish?
    - A. Whale
    - B. Seal
    - C. Walrus
    - D. Crocodile
    - E. None of the above

17. Polishing and grinding are frequently done with a
    - A. hammer.
    - B. stamping machine.
    - C. chisel.
    - D. lathe.
    - E. plane.

18. In spectrum analysis one uses a
    - A. prism.
    - B. micrometer.
    - C. test tube.
    - D. microscope.
    - E. computer.

Go on to the next page.

19. The minimum speed a rocket needs in order to get beyond the range where gravity will pull it back to earth is called
    A. thrust.
    B. anti-gravity pull.
    C. gravitational acceleration.
    D. escape velocity.
    E. gravity cancellation speed.

20. Common logarithms make computation
    A. more accurate.
    B. possible to check.
    C. unnecessary.
    D. more useful.
    E. easier.

21. On some electrical equipment, the plug has a third prong. This provides
    A. a boost in current.
    B. an increase in voltage.
    C. a ground.
    D. transfer from AC to DC.
    E. transfer from DC to AC.

22. Magnitude means
    A. generosity.
    B. size.
    C. location.
    D. kindness.
    E. direction.

23. Which of these is an important part of an air conditioner?
    A. Generator
    B. Distributor
    C. Amplifier
    D. Capacitor
    E. Compressor

24. Which of these is a prime number?
    A. 6
    B. 7
    C. 9
    D. 10
    E. 12

25. Eccentric means
    A. odd.
    B. feeble-minded.
    C. stingy.
    D. temperamental.
    E. solitary.

26. A barometer is used to measure
    A. temperature.
    B. rainfall.
    C. humidity.
    D. air pressure.
    E. cloudiness.

27. Which of these is a quadratic equation?
    A. $3x + 2 = 8$
    B. $5x^2 + 3x = 6$
    C. $x^3 + x^2 = 5$
    D. $x + y = 7$
    E. $2^x = 8$

28. A lever must have
    A. springs.
    B. gears.
    C. a pulley.
    D. a plumb line.
    E. a fulcrum.

29. Which of these is used to keep material that is being worked on from sliding around?
    A. Cam
    B. Vise
    C. Ratchet
    D. Awl
    E. Crampon

30. Aircraft wing lift at take-off is increased by
    A. flaps.
    B. ailerons.
    C. spoilers.
    D. nacelles.
    E. empennages.

31. Cutting away excess engine block or manifold material is known as
    A. porting the engine.
    B. gouging the engine.
    C. reaming the engine.
    D. broaching the engine.
    E. filing the engine.

32. Turpentine comes from
    A. vegetables.
    B. alcohol.
    C. trees.
    D. cottonseed.
    E. petroleum.

33. Electric current flow is measured in
    A. amperes.
    B. volts.
    C. watts.
    D. ohms.
    E. farads.

34. Green plants make sugars and starches out of
    A. oxygen and chlorophyll.
    B. oxygen and carbon dioxide.
    C. water and oxygen.
    D. water and chlorophyll.
    E. water and carbon dioxide.

35. Which of these tools is best for scroll work?
    A. Jig saw
    B. Band saw
    C. Circular saw
    D. Hack saw
    E. Jeweler's saw

36. Which of these is not used to slow down a jet airplane after landing?
    A. Ailerons
    B. Wheel brakes
    C. Parachute
    D. Flaps
    E. Speed brakes

37. An ohm is a unit of
    A. electrical resistance.
    B. electromotive force.
    C. strength of electric current.
    D. electrical capacity.
    E. electrical power.

38. A millimeter equals a
    A. thousandth of a meter.
    B. millionth of a meter.
    C. tenth of a meter.
    D. thousand meters.
    E. million meters.

39. Meat soaked in wine or vinegar before cooking is said to be
    A. blanched.
    B. marinated.
    C. seared.
    D. glazed.
    E. sauteed.

Go on to the next page.

40. What does the above symbol stand for in an electronic circuit?
    A. Condenser
    B. Relay
    C. Circuit breaker
    D. Transformer
    E. Stepping switch

41. In an automobile engine, gasoline and air are mixed in the
    A. carburetor.
    B. battery.
    C. generator.
    D. gas gauge.
    E. transmission.

42. Two lines at right angles to each other are
    A. horizontal.
    B. oblique.
    C. parallel.
    D. perpendicular.
    E. vertical.

43. "Dry ice" is frozen
    A. water.
    B. oxygen.
    C. carbon monoxide.
    D. carbon dioxide.
    E. hydrogen peroxide.

44. A municipal court is a
    A. city court.
    B. state court.
    C. Federal court.
    D. United Nations court.
    E. military court.

45. Which of these is not a mammal?
    A. Kangaroo
    B. Man
    C. Elephant
    D. Polar bear
    E. Eagle

46. Blunt means
    A. heavy.
    B. dangerous.
    C. weak.
    D. sharp.
    E. dull.

47. Which of these is organic matter?
    A. Coal
    B. Phosphorus
    C. Granite
    D. Water
    E. Uranium

48. Which of these would *not* be used to join two wooden parts?
    A. Nail
    B. Screw
    C. Dovetail
    D. Solder
    E. Glue

49. A plane traveling at exactly the speed of sound would be at Mach
    A. 0
    B. 1
    C. 100
    D. 760
    E. 1100

50. Obstruction means
    A. obeisance.
    B. obstacle.
    C. obstinacy.
    D. obstreperousness.
    E. obtuseness.

51. Which of these has no words?
    A. Aria
    B. Recitative
    C. Lieder
    D. Cantata
    E. Concerto

52. Graphite is sometimes used as a
    A. glue.
    B. lubricant.
    C. solvent.
    D. solder.
    E. paint.

53. A single cell battery for an ordinary flashlight is usually about
    A. 1½ volts.
    B. 3 volts.
    C. 6 volts.
    D. 12½ volts.
    E. 37½ volts.

54. Which of these is closest to the sun?
    A. Earth
    B. Saturn
    C. Pluto
    D. Mercury
    E. Jupiter

55. The hypotenuse of a right triangle is the
    A. longest side.
    B. shortest side.
    C. square root of the area.
    D. right angle.
    E. slanted side.

56. Fuses can be eliminated by the use of
    A. circuit breakers.
    B. fire warning systems.
    C. mercury switches.
    D. 160 amp. circuits.
    E. electronic thermostats.

57. Which of these is an amphibian?
    A. Fish
    B. Frog
    C. Camel
    D. Bird
    E. Worm

58. Threads are found on
    A. rivets.
    B. bolts.
    C. nails.
    D. screwdrivers.
    E. dovetails.

59. The fuselage of a plane is its
    A. fuel tank.
    B. engine.
    C. fuel.
    D. landing gear.
    E. body.

60. Which of these figures has two separate parts?
    A. Square
    B. Triangle
    C. Parabola
    D. Hyperbola
    E. Hexagon

Go on to the next page.

61. What does the above symbol stand for in an electronic circuit?
    A. Voltage
    B. Resistance
    C. Power gain
    D. Transistor
    E. Plate

62. Which of these is an obtuse angle?
    A. 45°
    B. 90°
    C. 135°
    D. 180°
    E. 360°

63. Static electricity is most likely to be caused by
    A. batteries.
    B. short circuits.
    C. electric lights.
    D. friction.
    E. electric power lines.

64. When a Centigrade thermometer reads 0°, a Fahrenheit thermometer would read
    A. 0°
    B. 32°
    C. 50°
    D. 100°
    E. 212°

65. Which of these is not a measuring device?
    A. Caliper
    B. Protractor
    C. Voltmeter
    D. Gauge
    E. Solder

66. The Van Allen belt is a zone of
    A. meteorites.
    B. comets.
    C. electricity.
    D. gravity.
    E. radiation.

67. The reciprocal of $\frac{3}{2}$ is
    A. — 1.50
    B. $1\frac{1}{2}$
    C. 1
    D. $\frac{1}{2}$
    E. $\frac{2}{3}$

68. An axiom is
    A. a proof.
    B. a corollary.
    C. an undefined term.
    D. a theorem to be proved.
    E. a basic assumption.

69. Vacuum tubes are often eliminated by the use of
    A. condensers.
    B. batteries.
    C. transistors.
    D. rectifiers.
    E. converters.

70. Restricted means
    A. scolded.
    B. redesigned.
    C. limited.
    D. refrained.
    E. tense.

71. A gasket is used to
    A. cover gas tanks.
    B. seal joints.
    C. measure pipe.
    D. control flow of gas.
    E. store natural gas.

72. Diesel oil is used as a
    A. lubricant.
    B. cleaner.
    C. fuel.
    D. salad dressing.
    E. cooking oil.

73. One way to increase the compression ratio of an automotive engine is to
    A. use hotter plugs.
    B. advance the spark.
    C. change valve timing.
    D. mill down the head.
    E. adjust the valves.

74. Which of these is a chemical compound?
    A. Air
    B. Oxygen
    C. Carbon
    D. Water
    E. Copper

75. The ratio of two numbers is their
    A. average.
    B. sum.
    C. difference.
    D. product.
    E. quotient.

76. How many cycles per second in ordinary house current?
    A. 40
    B. 60
    C. 100
    D. 110
    E. 220

77. The outer circle of green leaflike parts on a flower is called the
    A. stamen.
    B. ovule.
    C. corolla.
    D. calyx.
    E. pistil.

78. A masonry drill bit is tipped with
    A. brass.
    B. aluminum.
    C. tungsten carbide.
    D. selenium.
    E. stainless steel.

79. To discard is to
    A. gamble.
    B. hide.
    C. lie.
    D. take away.
    E. throw away.

80. The charge of an electron is considered to
    A. be positive.
    B. be neutral.
    C. be negative.
    D. vary randomly.
    E. alternate regularly.

81. Which of these is a bird of prey?
    A. Woodpecker
    B. Owl
    C. Starling
    D. Quail
    E. Crow

Go on to the next page.

82. Which of these is an imaginary number?
   A. 0
   B. $\frac{5}{4}$
   C. $-\sqrt{29}$
   D. $\sqrt{-4}$
   E. –.333333 . . . .

83. The place where a river starts is called its
   A. mouth.
   B. delta.
   C. tributary.
   D. valley.
   E. source.

84. A speaker designed to reproduce low frequencies is called a
   A. woofer.
   B. tweeter.
   C. squawker.
   D. boomer.
   E. thumper.

85. Which of these is a satellite of the earth?
   A. Mars
   B. Moon
   C. Sun
   D. North Star
   E. Halley's comet

86. In the expression 5^4, the number 4 is called
   A. a root.
   B. a square.
   C. a coefficient.
   D. a multiplier.
   E. an exponent.

87. Ordinary house current is usually about
   A. 50 volts.
   B. 60 volts.
   C. 80 volts.
   D. 115 volts.
   E. 150 volts.

88. Photosynthesis is the process by which a plant
   A. absorbs water.
   B. absorbs oxygen.
   C. absorbs minerals.
   D. makes food.
   E. turns toward the sun.

89. Placate means
   A. appease.
   B. praise.
   C. remove.
   D. bribe.
   E. entertain.

90. How many stars in the Big Dipper?
   A. 4
   B. 7
   C. 10
   D. 12
   E. 20

91. Which of these is a curved figure?
   A. Triangle
   B. Hexagon
   C. Ellipse
   D. Rhombus
   E. Prism

92. The wire in a light bulb is usually made of
   A. copper.
   B. zinc.
   C. tungsten.
   D. iron.
   E. tin.

93. Which of these is carnivorous?
   A. Chipmunk
   B. Cow
   C. Horse
   D. Tiger
   E. Elephant

94. A monkey wrench is a wrench that
   A. is very small.
   B. is very large.
   C. is adjustable.
   D. has two heads.
   E. has a short handle.

95. The noise of a jet plane breaking through the sound barrier is called
   A. jet jar.
   B. jet shot.
   C. sonic bar.
   D. sonic boom.
   E. sound break.

96. Electrical energy is changed into mechanical energy by a
   A. generator.
   B. motor.
   C. transformer.
   D. battery.
   E. rectifier.

97. Which of these trees is evergreen?
   A. Maple
   B. Oak
   C. Pine
   D. Birch
   E. Poplar

98. The motion of a jet plane is most like that of a
   A. gun recoiling.
   B. parachute opening.
   C. pitched baseball.
   D. water pump.
   E. dirigible rising.

99. A meter is closest to
   A. an inch.
   B. a foot.
   C. a yard.
   D. five-eighths of a mile.
   E. a mile.

100. Air consists mostly of
   A. hydrogen.
   B. oxygen.
   C. carbon dioxide.
   D. water vapor.
   E. nitrogen.

101. Sodium chloride is
   A. salt.
   B. sugar.
   C. baking soda.
   D. carbonated water.
   E. alcohol.

102. 4! equals
   A. $4 \times 4 \times 4 \times 4$
   B. $\sqrt[4]{4}$
   C. $4 \times 3 \times 2 \times 1$
   D. $4 + 3 + 2 + 1$
   E. $\frac{4 \times 3}{2}$

Go on to the next page.

103. How fast do radio waves travel?
   A. 1100 feet per second
   B. 186,000 miles per second
   C. 515,000 miles per second
   D. 750,000 miles per second
   E. 93,000,000 miles per second

104. If two triangles are similar, their sides are
   A. equal.
   B. parallel.
   C. perpendicular.
   D. proportional.
   E. overlapping.

105. Which of these is *not* an electronic device?
   A. Hearing aid
   B. Portable radio
   C. Tape recorder
   D. Geiger counter
   E. Washing machine.

106. Which of these is *not* warm-blooded?
   A. Alligator
   B. Pig
   C. Penguin
   D. Hawk
   E. Whale

107. Which of these is commonly used to fill cracks to make them waterproof?
   A. Plaster of Paris
   B. Beeswax
   C. Cotton wool
   D. Fiberglass
   E. Caulking compound

108. A space pilot, on blast-off, would be subjected to many
   A. r's.
   B. q's.
   C. g's.
   D. n's.
   E. t's.

109. The sun is a
   A. planet.
   B. moon.
   C. star.
   D. comet.
   E. meteor.

110. A brace-and-bit is used for the same general purpose as a
   A. drill.
   B. wrench.
   C. hammer.
   D. chisel.
   E. plane.

111. In free fall, a pilot always feels a lack of
   A. air.
   B. blood.
   C. weight.
   D. heat.
   E. strength.

112. The word "jalousie" refers to a kind of
   A. lamp.
   B. sofa.
   C. window.
   D. cabinet.
   E. container for plants.

113. The acceleration due to gravity equals about
   A. 32 sec. per ft.
   B. 32 ft. per sec.
   C. 32 ft. per sec. per sec.
   D. 32 ft. per ft. per sec.
   E. 32 sec. per ft. per ft.

114. Electron flow within a radio tube is mostly from the
   A. filament to cathode.
   B. control grid to cathode.
   C. plate to cathode.
   D. screen grid to control grid.
   E. cathode to plate.

115. The mixture of two metals forms
   A. a compound.
   B. an emulsion.
   C. an alloy.
   D. an ore.
   E. a refined metal.

116. Which of these would *not* be used in a hi-fi radio-phonograph?
   A. Cartridge
   B. Tuner
   C. Amplifier
   D. Verifier
   E. Speaker

117. Which of these is an irrational number?
   A. $\sqrt{2}$
   B. .283
   C. -3
   D. $\sqrt{4.00}$
   E. $1\frac{2}{5}$

118. How many dimensions has a rectangle?
   A. One
   B. Two
   C. Three
   D. Four
   E. None

119. Printed circuits in electronic equipment reduce the number of necessary
   A. tubes.
   B. resistors.
   C. condensers.
   D. transformers.
   E. wires.

120. Logarithms can be used to
   A. multiply and divide.
   B. add and divide.
   C. add and subtract.
   D. add and multiply.
   E. subtract and divide.

121. The Roman numeral for 900 is
   A. IXOO
   B. IXC
   C. CM
   D. CCCCCCCCC
   E. none of the above

122. What does the above symbol stand for?
   A. Emitter
   B. Series
   C. Ground
   D. Receiver
   E. Coil

STOP HERE! Go back and check your work.

INTEREST INVENTORY

This section is about different kinds of jobs. For each job, make believe you have all the training and other qualifications you need for it. All we want to know is how well you would like the job mentioned. If you say you like something, this means you would enjoy it, not that you really plan to do it.

Begin now.

Part I. Occupations

How much would you like each of the occupations listed below? Mark your answers as follows:

A. I would like this very much.
B. I would like this fairly well.
C. Indifferent or don't know much about it.
D. I would dislike this a little.
E. I would dislike this very much.

1. Bookkeeper
2. Bank teller
3. Surgeon
4. Chemist
5 Civil engineer
6. Dentist
7. Toolmaker
8. Automobile mechanic
9. Butcher
10. Tailor or dressmaker
11. Dietitian
12. Cab driver
13. Longshoreman
14. Foreman
15. Army officer
16. College president
17. Insurance agent
18. Stock salesman
19. Foreign correspondent
20. Editor
21. Aviator
22. Rancher
23. Statistician
24. Astronomer
25. Research scientist
26. Office clerk
27. Store clerk
28. Plumber
29. Electrician
30. Fireman
31. Dish washer
32. Maid
33. Naval officer
34. Personnel administrator
35. Lawyer
36. Reporter
37. Forester
38. Chemical engineer
39. Doctor
40. Aeronautical engineer
41. Secretary
42. Technician
43. Electronics technician
44. Bricklayer
45. Riveter
46. House painter
47. Building superintendent
48. President of a large company
49. Author of a novel
50. Librarian
51. Professional athlete
52. Certified Public Accountant
53. Biologist
54. Electrical engineer
55. Mining engineer
56. Typist
57. Laboratory technician
58. Repairman
59. Beautician
60. Railroad brakeman
61. Shoemaker
62. Factory worker
63. Devliveryman
64. Truck driver
65. Building contractor
66. Marine Corps officer
67. Real estate agent
68. Interpreter
69. Writer
70. Sports umpire or referee
71. Accountant or auditor
72. Mechanical engineer
73. Mathematician
74. Switchboard operator
75. Machinist
76. Welder
77. Paper hanger
78. Carpenter
79. Type setter
80. Draftsman
81. Air Force officer
82. Office manager
83. Banker
84. Salesman
85. College professor
86. Poet
87. Farmer

1 July 1965

Part II: Activities

How would you like to do each of the following? Mark your answers as follows:

A. I would like this very much.
B. I would like this fairly well.
C. Indifferent or don't know much about it.
D. I would dislike this a little.
E. I would dislike this very much.

88. Make out income tax returns
89. Biology
90. Physics
91. Study muscles and nerves
92. Calculus
93. Keep records for a store
94. Invent new tools
95. Fix furniture
96. Work on an automobile assembly
97. Wash and iron clothes
98. Plan work for other people
99. Own your own business
100. Reading
101. Fishing
102. Basketball
103. Tennis
104. Raise sheep or cattle for market
105. Work arithmetic problems
106. Prepare cost estimates
107. Typewriting
108. Make a radio set
109. Fix a clock
110. Operate a power machine
111. Fire a person
112. Manage a large store
113. Save money
114. Work for myself
115. Write letters
116. Football
117. Track
118. Operate farm machinery
119. Operate a calculating machine
120. Physiology
121. Chemistry
122. Play chess
123. Solve puzzles
124. Do clerical work
125. Repair an auto
126. Operate a crane or derrick
127. Work in a steel mill
128. Hire a person
129. Give orders to workers in a factory
130. Sell furniture
131. Trap wild animals
132. Foreign language
133. Keep accounts
134. Algebra
135. Learn about diseases
136. Sell merchandise to stores
137. Literature
138. Write themes
139. Hunting
140. Swimming
141. Feed hogs and cattle
142. Shop work
143. Do odd jobs with small tools
144. Direct people
145. Arrange a strike settlement with management
146. Poetry
147. Studying
148. Military drill
149. Baseball
150. Gardening